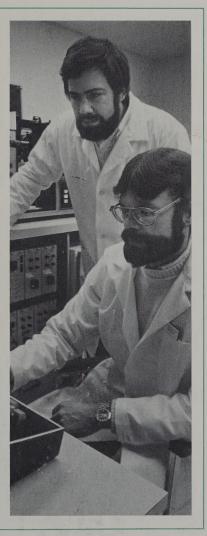
# RUSH-PRESBYTERIAN-ST. LUKE'S MEDICAL CENTER

## Graduate Medical Education 1991-93







Rush University Presbyterian-St. Luke's Hospital

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1991-93

**Graduate Medical Education** 

Rush-Presbyterian-St. Luke's Medical Center



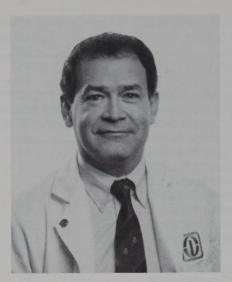
Rush University Rush-Presbyterian-St. Luke's Medical Center

Office of Graduate Medical Education Rush-Presbyterian-St. Luke's Medical Center 600 South Paulina Street Chicago, Illinois 60612

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Leo M. Henikoff, M.D.

President and Chief Executive Officer

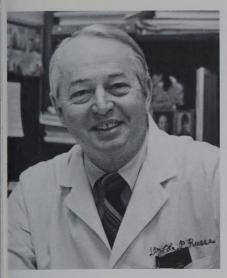
ew residents reinvigorate an institution such as ours. My predecessor liked to say that each new group of residents created a positive information balance, bringing much more than they took away. We are delighted that you believe that your graduate medical education could not be in an environment more conducive to learning. In addition, I hope that you will find the environment stimulating to your professional and personal development. Here at Rush outstanding practitioners and scholars share a wealth of knowledge born of hands-on experience and research. The primacy of patient care is woven into the very fabric of the Medical Center and its richly diverse operations and activities. In November of 1985 the Board of Trustees ratified a revised mission statement for the Medical Center which reaffirms the centrality of quality care as the focal point of our activities.

In this changing health care environment patient care itself has begun to migrate away from hospital-based delivery to an array of outpatient settings. The Medical Center has been in a leadership position in this regard and has undertaken a number of initiatives which, together with its outstanding resources in advanced technology and its distinguished professional staff, provide house staff with opportunities to round out their experience through participation in nonhospital care which has special relevance for their future practices.

We are all very busy. I hope that you will take the time to reflect on the goals that you set for yourself in embarking on your medical career years ago. The pressures of undergraduate medical education can at times cause you temporarily to lose sight of the motivation that has truly been the source of the aspiration to become a physician — caring for the well-being of patients. This is, in fact, precisely what we are about.

My welcome to you is sincere. I hope that you feel welcomed by our institution and make the best use of these postgraduate educational years.

Leo M. Henikoff, M.D. President and Chief Executive Officer



Henry P. Russe, M.D. Vice President, Medical Affairs Dean, Rush Medical College

The patient is central in studies at Rush Medical College. Excellence in patient care is a base for the learning experience, emphasizing the educational process and building lifelong habits of acquisition of medical knowledge.

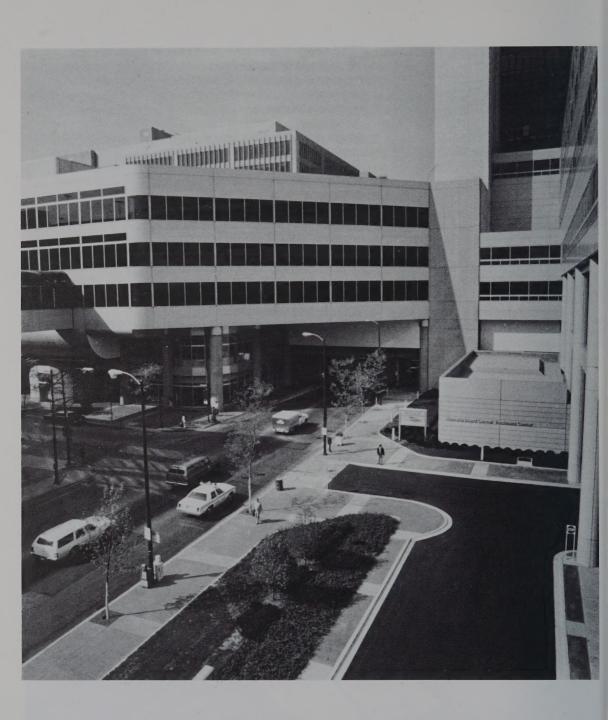
The faculty, attending medical staff, and resident house staff are all an integral part of the teaching program. Superbly equipped facilities at Rush and the wide variety of patient populations provide a spectrum of opportunities for the development of vital skills and knowledge.

Rush-Presbyterian-St. Luke's Medical Center, responsive to the needs of society for health care, manpower development and education in the health professions, has developed a vertically integrated, multi-institutional system providing for the total health care needs of a large and diverse population. This growing system is managed flexibly to be responsive to the needs of the populations we serve.

Our dynamic institution is a leader in the private sector. You are invited to join us.

Henry P. Russe, M.D. Vice President, Medical Affairs Dean, Rush Medical College





The Medical Center

### Introduction

Rush-Presbyterian-St. Luke's Medical Center (RPSLMC) offers training in 22 clinical departments to approximately 450 residents, trainees, and fellows each year. Presbyterian-St. Luke's Hospital (PSLH) provides the major clinical base for our graduate medical education programs. The hospital is a national referral center and a community resource. More than a dozen other institutions affiliated with Rush University provide complementary and supplementary opportunities for the trainee in rural, semirural, suburban, and urban environments.

The 1,167 members of the active medical staff are on the faculty of Rush University, as are many of the attending physicians at our affiliated hospitals. The University's faculty includes more than 3,000 clinicians and scientists.

Many members of the attending staff at Presbyterian-St. Luke's have private practice offices located in one of the professional buildings on campus. Postgraduate training in many departments includes opportunities to follow patients in these offices.

### History of the Medical Center

The traditions of Rush-Presbyterian-St. Luke's Medical Center began with Rush Medical College, which graduated over 10,000 physicians from its founding in 1837 until it suspended its activities in 1942. The graduates and the faculty of Rush played major roles in the establishment of the medical schools of both Northwestern University and The University of Chicago.

In 1883, at the urging of the Rush faculty, Presbyterian Hospital was founded as the first voluntary hospital in the country built for the patients and students of an academic medical facility. In 1956, Presbyterian Hospital merged with another long-established, community-based hospital, St. Luke's to form Presbyterian-St. Luke's Hospital.

In 1969, an incorporation joined the charters of the inactive Rush Medical College and the hospital to form Rush-Presbyterian-St. Luke's Medical Center. The medical college resumed activities shortly thereafter, admitting students in 1971.

Rush University was created in 1972 when the College of Nursing joined Rush Medical College. These two colleges were joined by a third, the College of Health Sciences, in 1975. The Graduate College, formerly positioned within the College of Health Sciences, was established as a free-standing graduate college in 1981.

### **Facilities**

Now with more than 150 years of service to Chicago and the Midwest, Rush Presbyterian-St. Luke's Medical Center is widely recognized as one of the nation's leading academic health centers. Its primary mission — to provide high quality, compassionate, comprehensive health care to all patients — is accomplished through its many highly skilled and specialized professionals, extensive services and programs, and numerous facilities both at the Medical Center's main campus and at some 30 locations throughout the Chicago area.

The Rush System for Health radiates from the Medical Center's 33 acre campus on the near West Side where are located Presbyterian-St. Luke's Hospital with 903 beds, Rush University with its four colleges, and the Johnston R. Bowman Health Center for the Elderly, a 176-bed geriatric rehabilitation hospital. Here also are found most of the 7,500 physicians, nurses, scientists, faculty and supporting staff; a number of specialty centers which coordinate treatment, research and education, among them the Rush Cancer Center, the Multiple Sclerosis Center, The Thomas Hazen Thorne Bone Marrow Transplant Center of Rush Presbyterian-St. Luke's Medical Center and the Rush Alzheimer's Center; and major research facilities which support more than 1,300 active research projects.

In addition, the Medical Center's patient care resources include two hospitals integrated into the Rush System (Copley Memorial Hospital, Aurora and Rush North Shore Medical Center, Skokie). They also include the Rush Presbyterian-St. Luke's Health Plans, Inc. (RUSH Anchor, a health maintenance organization; RUSH Access, an independent practice association; RUSH Contract Care, a preferred provider organization, and RUSH Occupational Health, a network of industrial health care centers), as well as Rush Home Health Services and satellite offices in River City and the Northwestern Station Atrium Building. The Medical Center is also affiliated with 13 hospitals in Illinois and Indiana and with 16 colleges and universities in six states.

The Medical Center is a leader in the health care field, achieving national and international recognition for its exciting discoveries evolving out of research projects and for its innovative treatment programs which respond to

major health problems.

In addition to Rush-Presbyterian-St. Luke's Medical Center, the clinical network consists of:

Bethany Hospital, Chicago	212 beds
Central DuPage Hospital, Winfield	371 beds
Christ Hospital and Medical Center, Oak Lawn	873 beds
Elmhurst Memorial Hospital, Elmhurst	319 beds
Galesburg Cottage Hospital, Galesburg	265 beds
Grant Hospital of Chicago, Chicago	508 beds
LaGrange Memorial Hospital, LaGrange	276 beds
LaPorte Hospital, LaPorte, Indiana	227 beds
MacNeal Hospital, Berwyn	427 beds
Marianjoy Rehabilitation Center, Wheaton	91 beds
St. Mary's Hospital, Streator	248 beds
Swedish Covenant Hospital, Chicago	355 beds
West Suburban Hospital Medical Center, Oak Park	374 beds

### **Patient Care**

Active Medical Staff	1,167
Presbyterian-St. Luke's Hospital	
Bed capacity (excluding bassinets)	903
Total admissions (including newborn)	28,066
Total days patient care (including nursery)	223,828
Occupancy	80.1%
Emergency room visits	35,206
Blood transfusions	54,064

### Johnston R. Bowman Health Center for the Elderly

Bed capacity	176
Total days patient care	40.985

G1	G2	G3	G4	G5	G6	<b>G</b> 7
Fan	nily Pract	ice				
			Peds. Sp	ecialties		
	Pediatrics		Allergy-	lmmun.		
			Med. Sp	ecialties		
Inte	rnal Medic					
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		Veurology	1			
	Psych	niatry				
		Pathology				
Obstetrics-Gynecology						
Ô	Anesthe	siology				
General Surgery			ierv		Pla	stic
					CV-Th	oracic
			Urology			
		Otolary	ngology			
Neurosurgery						
		Ortho	pedics			
Ophthalmolo			ogy			
Therapeutic Radiolog			ду			
	Diagno	stic Radi	ology*			/

<sup>\*</sup>G1 requirement: Transitional/General Medicine/or General Surgery

Rush University (Rush Medical College, College of Nursing, College of Health Sciences, The Graduate College) Faculty
Student body (including house officers)
For a complete list of Rush Medical College faculty, see the Rush University Bulletin.

3,269 1,599

### Research

Opportunities are available for house officers to participate in master's and doctoral programs in conjunction with their graduate medical education. Approximately five percent of the current Medical Center budget is devoted to research, and the proportion is growing. The commitment has involved annual expenditures in the area of \$16 million, funded by private agencies, foundations, corporations, federal and state agencies, and individuals.

The Medical Center has a number of interdisciplinary committees for patient care, in which physicians, surgeons, scientists, psychologists, nurses and other health professionals develop integrated therapies for patients with diseases such as multiple sclerosis, rheumatoid arthritis and Alzheimer's Disease. The interdisciplinary approach also is used in the research areas, especially in the approaches to cancer, cardiovascular diseases and orthopedics. House officers are encouraged to take an active role in the continuing exchange of information and insight.

Research projects in progress Research publications Research awards, 1988-9

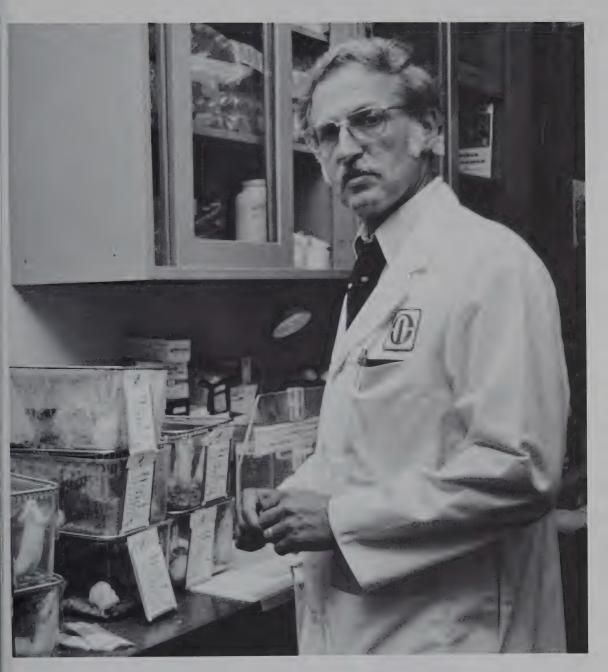
1,296 \$16,758,988

1,304

Programs in Graduate Medical Education

Graduate medical education programs offered at Rush, along with the minimum requirements for specialty board certifications, are shown on the chart on page 9. All G-1 positions are offered through the National Resident Matching Program.

Residency programs in obstetrics and gynecology, orthopedics, general surgery, pediatrics, and family practice are fully integrated with those at network hospitals. Recruitment for residency and fellowship positions at Rush is handled by individual department chairmen and inquiries about programs and requests for applications should be addressed to them (see program descriptions that follow).



### Medical Sciences and Services

Walter Fried, M.D. Associate Dean for Medical Sciences and Services and Associate Vice President for Medical Affairs

### Department of Immunoloay/ Microbiology

**Program in Allergy** and Clinical **Immunology** 

Henry Gewurz, M.D., The Thomas J. Coogan, Sr., M.D., Professor of Immunology and Chairman Howard J. Zeitz, M.D., Director

The Department of Immunology/ Microbiology, together with The Max Samter Institute of Allergy and Clinical Immunology, Grant Hospital of Chicago, offers a two-year residency in allergy and clinical immunology (with an optional third year) to prepare physicians to assume a leadership role in the field of allergy and clinical immunology. Upon successful completion of the program, trainees are prepared to take the examination of The American Board of Allergy and Immunology, a conjoint board of The American Board of Internal Medicine and The American Board of Pediatrics. Seven full-time and eight part-time faculty members participate in the program.

The training program provides balanced, intensive and diversified training in all aspects of allergy and clinical immunology. Teaching clinics are conducted in the Professional Building on the main campus, and at The Max Samter Institute of Allergy and Clinical Immunology (Grant Hospital). Approximately 1,000 new outpatients and 150 new inpatients are seen yearly. There are more than 10,000 outpatient visits yearly.

The clinical service provides care for inpatients and outpatients with the classical allergic diseases of urticaria, rhinitis, asthma and pulmonary hypersensitivity diseases. as well as patients suffering from immunodeficiency diseases and systemic hypersensitivity diseases including vasculitis and systemic

lupus erythematosus.

Trainees are responsible for the care of patients, under the direct supervision of an attending physician. Trainees learn routine and specialized diagnostic procedures including skin testing, pulmonary function testing, bronchoprovocation testing and challenge testing. Trainees also receive instruction regarding a wide variety of clinical immunology laboratory techniques.

The formal didactic program includes hospital teaching rounds,



patient care conferences and basic and clinical immunology conferences scheduled on a regular basis throughout the week. Lectures on specialized topics cover a wide variety of subjects in pulmonary medicine, infectious disease, rheumatology, oncology, dermatology, nephrology and hematology. Trainees attend a variety of conferences, seminars, and formal courses sponsored by the department. Trainees also take an active role in the education of rotating residents and medical students.

All trainees participate in the basic and/or clinical research programs of the department. Research is conducted under the direct supervision of one of the members of the department. Areas of current interest include: the immunobiology of the inflammatory response; the

biology of the complement system; the pathogenesis of allergic disease in general and food allergy in particular; mechanisms underlying mediator release from basophils and mast cells; the roll of gammaglobulin in host defense against infection; the etiology and pathogenesis of Samter's syndrome (nasal polyps, bronchial asthma inflammatory drugs); and the inflammatory drugs; and the development of new treatments for allergic diseases.

Trainees must have completed an approved residency in internal medicine or pediatrics prior to starting the training program in allergy and clinical immunology. Please direct inquiries to Howard J. Zeitz, M.D., Department of Immunology/Microbiology.

### Department of Dermatology

### Frederick D. Malkinson, M.D. D.M.D., The Clark W. Finnerud, M.D., Professor of Dermatology and Chairman

The Department of Dermatology offers a three-year residency training program accredited by the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Dermatology. The program accommodates a total of four residents. One new resident is accepted for each of two years and two are accepted every third year. All appointments are made through the National Dermatology Matching Program. The focus of training is on the prevention, pathogenesis, diagnosis (including histopathologic and immunopathology) and treatment of skin diseases. There is a special emphasis on systemic disease—skin disease associations and relationships. The understanding of normal skin care as it relates to preventive medicine aspects of dermatology is stressed. The tutorial method of clinical teaching is intensively applied and

is enhanced by a favorable staff-totrainee ratio (three full-time and 17 part-time volunteer staff members).

During the first year, the resident participates in the outpatient service by making initial contact with new patients and discussing differential diagnostic and therapeutic regimes under the supervision of the attending physician. The resident learns routine and special diagnostic procedures such as biopsies and minor excisions, patch testing, dark field examination, and KOH examination for fungi. The resident gradually assumes more responsibility for patient care. Each hospitalized patient is assigned to a specific resident who is responsible for organizing the workup and treatment. Second-vear residents assume greater independence and also assist in the clinical training of medical students and residents from other services. Third-year residents assume additional responsibilities, and also present lectures and other formal teaching sessions for medical students, other health

sciences students and practitioners. Some department administrative duties pertaining to the resident training program (clinic assignments and schedules, organization of seminars, etc.) are assigned to the chief resident.

Annually, the Department of Dermatology sees approximately 12,000 outpatients, with 5-10 inpatient admissions, and receives over 700 referrals for inpatient hospital consultations. Consultation on inpatients and emergency room patients are initially conducted by the resident on call and presented to the attending staff member.

Clinical experience encompasses a broad scope of problems including cutaneous infections, severe blistering diseases and drug eruptions, psoriasis and other major dermatoses, cutaneous malignancies, connective tissue diseases and complicated diagnostic problems. The department is a major referral center for the greater Chicago area. Specialty clinics include pigmented lesion and skin surgery clinics where routine and more complicated procedures such as hair transplantation, flap rota-

tions and sclerosing chemotherapy are performed. Residents are also trained in the administration of phototherapy and dermatologic laser therapy.

Specialty programs include twiceweekly histopathology conferences and lecture series including radiation therapy, phototherapy, mycology and the various dermatological basic sciences as well as weekly formal journal club and book review meetings. Third-year dermatology residents have the opportunity to rotate to other services in the institution. Patients with diagnostic. treatment, or other interesting problems are presented and discussed at monthly staff conferences. Residents also attend the monthly meetings of the Chicago Dermatological Society. National and regional dermatological meetings, as well as other scientific meetings, may be attended on a selective basis. The department is actively involved in clinical and basic research and interested residents have the opportunity to participate in these activities during the resident training period.

## Department of Family Practice

### Erich E. Brueschke, M.D., Chairman and Program Director

William Schwer, M.D., Associate
Chairman and Associate
Program Director
Thomas Dent, M.D., Associate
Program Director and Director,
Christ Hospital and Medical
Center Family Practice Center
Steven Rothschild, M.D.,
Co-Director, Internal Medicine
and Family Practice Geriatrics
Fellowship

The Department of Family Practice offers a postdoctoral three-year combined hospital residency, the Rush-Christ Residency in Family Practice, with an optional one-year

fellowship to train future teachers of family medicine. The Rush-Christ Residency in Family Practice is a strong university-based program. Emphasis is on teaching and educational opportunities for the resident, combined with community-oriented training at Christ Hospital and Medical Center in suburban Oak Lawn. The residency program is accredited by the Accreditation Council for Graduate Medical Education and the Residency Review Committee for Family Practice.

The sine qua non of family practice is the knowledge and skill that allow the physician to confront relatively large numbers of unselected patients and to develop therapeutic relationships with these patients

and their families over extended periods of time. The residency is structured to prepare the physician for this role. There are nine residency positions in each year of the program and one fourth-year fellowship.

During the first year, residents spend 20 weeks in internal medicine. Eight weeks are spent in the inpatient family practice service. There are 12 weeks spent in pediatrics at Rush and Christ where the resident trains in the inpatient ward and the nursery. Twelve weeks of rotation in obstetrics and gynecology are at Christ Hospital and Medical Center. The residents spend approximately one-half day per week seeing their own patients in the Christ Hospital and Medical Center Family Practice Center. There are weekly conferences held in the Family Practice Center.

In the second year, residents take 12 weeks of pediatrics at Rush and Christ Hospital and Medical Center. where the resident trains in the inpatient ward, emergency room and a four-week elective; a four-week rotation in neurology, an eight-week rotation in general surgery at Grant Hospital, a six-week rotation in emergency medicine at Christ Hospital and Medical Center, and additional rotations in dermatology. behavioral medicine, alcoholism, orthopedics and otolaryngology/ ophthalmology, urology and occupational medicine. Residents spend two to three afternoons a week seeing their own patients in the Family Practice Center at Christ Hospital and Medical Center.

In the third year, inpatient experiences include approximately 12 weeks of required internal medicine electives, other electives to meet the needs of the resident, and rotations in community medicine, geriatric medicine, six-week rotations as the Family Practice Center resident and as the senior resident on the family practice in-service. Residents spend approximately 14 to 16

hours per week seeing their own patients in the Family Practice Center. Behavioral sciences and clinical psychology experiences are continuous over the three years.

This is a combined hospital residency program. All outpatient Family Practice Center training is at Christ Hospital and Medical Center where, for the entire three years, residents maintain continuity of care with their patients. A team approach is used. By the third year, each resident will be caring for about 250 families. The integration provides experiences at both a tertiary care academic medical center and a high-quality private practice, community-oriented teaching hospital.

Each resident's program can be individualized through electives to meet personal interests, career objectives and the clinical responsibilities to be faced in the community. Graduated responsibility is the prevailing objective—residents occupy their own offices and provide care to their own patients. An approach to primary care utilizing a broad spectrum of health care professionals is encouraged. This is strengthened by a full-time clinical psychologist and a medical social worker assigned to the center.

Conferences held at the Family Practice Center include conferences on behavioral science topics, clinical research, office management, medical problem solving, family practice grand rounds, geriatric medicine and problemoriented medical grand rounds. All important decisions affecting resident rotations and/or residency affairs are jointly made by faculty in consultation with residents. Monthly meetings are held with elected resident representatives from each year, the chief resident in family practice and the faculty.

Research interests among the department's faculty focus on a variety of primary care issues and are coordinated through the Sec-

tion of Research and Education Development.

Address all inquiries to the chairman.

### Section of

## Research and Education Development

### William Rose, Ph.D., Director

The Section of Research and Education Development is a component of the Department of Family Practice. This section, established with funding from a United States Department of Health and Human Services Public Health Service grant to the department, directs the implementation of clinical, educa-

tion and evaluation research projects. The department's faculty development program, including an annual workshop, is a key section responsibility. Research lectures and grant applications are also coordinated by the section.

Adolescent health, alcoholism intervention, contraception, new pharmaceutical agents, the delivery of health care by family physicians, the impact of illness on the family, and the family physician's influence on lifestyle changes are areas of continuing interest. Faculty also design and implement family practice medical education projects including yearly surveys of applicants to the Rush-Christ Family Practice Residency Program and the use of problem-based learning strategies in clinical teaching.



### Department of Internal Medicine

Roger C. Bone, M.D., The Ralph C. Brown, M.D., Professor of Internal Medicine and Chairman Stuart Levin, M.D., The James Lowenstine Professor of Internal Medicine and Associate Chairman

The Department of Internal Medicine provides a three-year program of postdoctoral residency training accredited by the American Medical Association. An additional year of advanced training with teaching responsibility and an adjunct medical staff appointment is offered in a chief residency to four third year internal medicine residents. Fortythree first-year positions are offered annually through the National Resident Matching Program.

The first year is structured to provide intensive patient contact utilizing some 320 medical beds divided into six general medical units, an oncology unit, a geriatric unit, a medical intensive care unit and a bone marrow transplant unit. The resident spends eight months on the general medical units, one month on the oncology unit, one month on the geriatric unit and two months at Rush North Shore Medical Center, a community hospital in Skokie. Illinois. The resident additionally spends one month in the intensive care unit. There is one month elective time and four weeks vacation/educational leave. Most general medical units are staffed by two second- or third-year residents, four first-year residents and three Rush Medical College students. The elective month may be taken in any medical or surgical specialty or pediatrics, psychiatry or neurology.

In the second year, the resident spends six months supervising general medical units and has two months of emergency room-triage experience. The remainder of the vear is spent on elective services.

The third-vear resident spends one to three two-month rotations on a general medical unit and the rest of the year in the subspecialty areas of his or her choice. Throughout the training period, each medical house officer is assigned one-half day a week to an outpatient medical practice. This continuing assignment provides the physician with the opportunity to provide long-term care: it uses either RUSH Anchor, our HMO, or, in most cases, the Department of Medicine clinics in the

Academic Facility.

With the expansion of Rush-Presbyterian-St. Luke's Medical Center to include the corporately-integrated hospital, Rush North Shore Medical Center, the department has expanded its training potential to include experience in a community hospital setting. Rush North Shore is a 300-bed community hospital with two 40-bed covered units in internal medicine staffed by four Rush senior residents and eight first-year residents assigned to internal medicine. Each first-vear resident will likely spend two months at Rush North Shore, and each R2 and R3 resident will spend one or two months during their final two years in residency. Rush North Shore gives residents an outstanding experience in a community hospital setting with optimal conditions in the community and in patients, faculty and support services. House officers may elect to spend limited periods of time in affiliated institutions with approved programs in internal medicine.

The Department of Internal Medicine schedules regular teaching sessions, including medical grand rounds, attending and chairman's rounds, weekly subspecialty rounds, morbidity and mortality conferences. Seminars, lectures, and clinico-pathological conferences are conducted by staff and by visiting professors of medicine throughout the year.

The chief residents conduct grand rounds for first-year residents each Saturday morning, and provide formal conferences on the wards each week. A vigorous program of education is provided in the ambulatory care facilities of the department. Residents in the Department of Internal Medicine rotate through emergency services for two months. This rotation is unique for the residents in that most of the patients are evaluated on first encounter and medical decisions must be made in an expeditious fashion. The residents have a diversified medical experience. Besides evaluating unstable or ambulatory medical patients, the resident also manages a spectrum of surgical patients as well as psychiatric, obstetric and gynecologic patients. The basic learning experience is that of a preceptorship with the resident performing the primary care and supervisory support coming from attending physicians of the academic faculty in medicine and

emergency services.

Individualization of programs is encouraged and other postgraduate programs are available, including elective rotations through ear, nose, and throat (ENT), office gynecology, ophthalmology, and psychiatry for internists. Further intensive care experiences beyond the residency are available in the clinical and research fellowships offered by the various sections of the department.

In accordance with Section 709 of the Public Service Act, Rush-Presbyterian-St. Luke's Medical Center will, upon request from qualified applicants, offer shared-schedule residency programs in internal medicine. These programs will be designed by the department in consultation with the candidate making the request.

Inquiries regarding the program should be directed to the chairman.



### Section of

### Cardiology

### Joseph E. Parrillo, M.D., The James B. Herrick Professor of Heart Research and Director

The Section of Cardiology provides extensive consultation and diagnostic services, participates in medical student education in both the basic and clinical sciences, and conducts research studies involving clinical cardiology, experimental biochemistry and physiology, and computer application.

Residents in the Department of Internal Medicine rotate through this section. Education emphasis is on the improvement of physical diagnostic abilities in clinical cardiology, and the acquisition of skills in interpretation of invasive and noninvasive studies. Particular emphasis is placed on evaluation of the complex cardiac patient using electrocardiographic, echocardiographic and catheterization data.

The Cardiology Fellowship is a three-year program. Eligibility requires completion of three years of residency training in internal medicine. Training includes inpatient and outpatient cardiovascular consultation; cardiac catheterization and coronary arteriography; electrophysiology, including intracardiac and epicardial mapping; exercise electrocardiography; and cardiac graphics, including Mmode, 2D, and Doppler echocardiography and phonocardiography. Fellows also gain experience in pacemaker insertions and technology; nuclear cardiology, including gated blood pool scanning and rehabilitative coronary care; and computer techniques in cardiology and preventive cardiology. The second and third years allow concentration in research and instrumentation in a specific field of cardiology.

Inquiries regarding the fellowship program should be addressed to the section director.

### Section of

### Critical Care Medicine

### Joseph E. Parrillo, M.D., The James B. Herrick Professor of Heart Research and Director

The newly-created Section of Critical Care Medicine was formed in 1989 in recognition of the increasing importance of critical care medicine and the multidisciplinary nature of managing critically ill patients. This section is responsible for the administration of all the intensive care units (ICUs) within the Department of Medicine. These ICUs total approximately 60 beds and consist of a Coronary Care Unit, a Coronary Step-Down Unit, a Medical Intensive Care Unit, and a Respiratory Step-Down Unit. The section conducts the educational training program for internal medcine residents rotating through these ICUs. Members of the section are also responsible for supervision of critical care procedures including placement of arterial and pulmonary artery catheters and mechanical ventilation.

The Critical Care Fellowship consists of two basic pathways: (1) a Pure Critical Care Medicine program in which board eligible medical residents choose to train solely in critical care. These fellows spend 12 full months in clinical critical care and an additional 12 to 24 months performing clinical investigation and participating in critical care related rotations: (2) a combined program between a medical subspecialty (usually cardiology or pulmonary medicine) and critical care medicine. This combination program reguires 12 full months of clinical critical care medicine in addition to the

requirements for the other medical subspecialty. Both pathways provide extensive experience in management of critically ill patients in all the Department of Medicine ICUs, consultative experience regarding management of surgical ICU patients, and experience performing ICU procedures. Fellows also actively participate in a critical care education program and learn about administrative and ethical concerns for critically ill patients. The fellowship contains a major emphasis on performing critical care related research.

Inquires regarding this fellowship should be directed to the section director.

#### Section of

### **Digestive Diseases**

## Seymour Sabesin, M.D. The Josephine Dyrenforth Professor of Gastroenterology and Director

The Section of Digestive Diseases provides endoscopic and diagnostic services, consultations and medical education in matters relating to the gastrointestinal tract. The section has two units: the gastrointestinal unit and the liver unit, which serve to fulfill these functions. In addition, the liver unit is investigating a variety of clinical and fundamental problems related to liver cell membranes, toxic and viral hepatitis, and chronic hepatitis.

Residents and students may elect to rotate for one-month periods with the liver unit or gastro-intestinal unit consulation services. They will participate in the diagnostic workups and procedures under supervision of the attending staff. Formal teaching sessions include weekly pathology slide seminars and clinical case conferences, in addition to daily patient care rounds. Resident and student re-

search projects are strongly encouraged and may be developed upon application to the section director.

Two-year fellowships are available to individuals who are board eligible or certified in internal medicine. Fellows will be eligible for the gastroenterology board examination upon completion of the fellowship.

Inquiries should be addressed to the section director.

### Section of

### Endocrinology and Metabolism

### John D. Bagdade, M.D., Director

The Section of Endocrinology and Metabolism emphasizes a broad physiological approach to the spectrum of clinical problems seen in outpatient and hospital consultation by our attending staff and residents. The clinical program and fellowship are fully integrated with the Division of Endocrinology at Cook County Hospital, and its director, Dr. C.R. Kannan, who directs a highly skilled team of physicians and educators who contribute significantly to the Rush program. Endocrine rounds are held weekly with the staffs of Rush and Cook County Hospital participating. Endocrine Grand Rounds are held monthly on a rotating basis between Rush and Cook County.

The research programs of the section are funded primarily by grants from the National Heart, Lung and Blood Institute. The range of projects under study includes the study of lipoprotein composition, function, and lipoprotein-cell interactions in diabetes mellitus, hyperlipidemia, and in other conditions in which atherogenesis is accelerated. Dr. P.V. Subbaiah, the director of the section's research laboratory, has ongoing NIH support for his original

investigations of the transport of phospholipids in plasma. Other projects include assessment of new therapies for Paget's Disease conducted by Dr. Will Ryan, a world authority on this disorder.

The teaching program is active at all levels. The section offers students, residents and fellows supervised experience with both outpatients and inpatients. In addition to regularly scheduled conferences, the section selects, jointly with Cook County Hospital, two fellows who serve for two years as part of a fully integrated fellowship program. All fellows are required to design and execute a research project which may be either primarily clinical or laboratory in nature.

Individuals may apply for approved fellowships after three years of residency training or by special arrangement.

Fellows should be eligible to take the examination for certification by the American Board of Internal Medicine. Please direct inquiries to the section director.

### Section of

### **Geriatric Medicine**

Thomas J. Schnitzer, M.D., Ph.D., The Willard L. Wood, M.D., Professor of Rheumatology and Director

Comprehensive evaluation of the elderly individual, with an emphasis on functional assessment, is provided by the Section of Geriatric Medicine. The Johnston R. Bowman Health Center for the Elderly (a comprehensive restorative care and residential facility on the Medical Center campus) is the focus of much of the inpatient geriatric care, and reflects the spectrum of the well elderly to the frail, disabled elderly. House officers in internal medicine rotate on the acute medical unit of the center; a regular lec-

ture series during the rotation highlights age-associated and agerelated conditions in the elderly population.

The Geriatric Assessment and Planning Service is a consultative service provided by a multidisciplinary team for inpatients and outpatients directed toward addressing complex care needs. Other outpatient care is provided at the Medical Center and through several community based facilities.

During the four-week elective in geriatric medicine the house officer or senior medical student is exposed to the long-term care continuum (community based to institutional care); selected clinical problems that impact on function of the elderly (dementia, urinary incontinence, and gait disorders); and instruments of functional assessment. The need for a multidisciplinary approach to the management of the disabled elderly is stressed.

Research activities are directed to areas of expertise of the individual faculty and include the following fields: epidemiology, health care delivery issues, osteoarthritis, incontinence and dementia.

Fellowships of two years with a possible third year are offered, leading to eligibility for certification in the subspecialty of rheumatology by the American Board of Internal Medicine.

Inquiries regarding fellowships for rotations by students and residents should be addressed to the program director.

#### Section of

### Hematology

William H. Knospe, M.D., The Elodia Kehm Professor of Hematology and Director

The Section of Hematology provides consultative services for patients with hematologic malignancies, anemias, coagulation disorders, immunohematology, and non-malignant disorders. The section provides diagnostic laboratory information and hematologic measurements for all Medical Center patients and participates in the clinical hematology laboratories, the Blood Center and the coagulation and platelet function laboratories. The Blood Center provides full service blood banking, including provision of various component therapies and frozen blood. The Clinical Hematology Laboratory is highly automated and incorporates a dedicated interactive computer to assist in expediting the reporting of results. In addition to all standard procedures for counting and identifying blood cells, the laboratories provide many highly sophisticated diagnostic hematology and coagulation laboratory procedures.

This section offers fellows in hematology, residents in internal medicine and senior medical students supervised clinical experience with inpatients and outpatients and opportunities to participate in diagnostic laboratory procedures. Teaching activities include daily hospital teaching rounds and weekly sectional conferences and seminars on patient-oriented problems, clinical and basic science topics in hematology, marrow morphology, clinical coagulation problems and the Medical Center's weekly lymphoma and tumor conferences. The residents also participate in the outpatient office practice conducted by the section. Residents in internal medicine and medical students are assigned for four weeks at a time and fellowships in hematology or hematology/medical oncology are available at the end of the third year of residency training.

A program of bone marrow transplantation has been established under the direction of Herbert Kaizer, M.D., Ph.D., with Solomon S. Adler, M.D., and Carol M. Richman, M.D., as members of the transplant team.

Participation in the research activities of the section is encouraged. Research in the Section of Hematology continues to span a broad rance of activities. These activities include biochemical and physiological studies at cellular and subcellular levels, basic studies of pattern recognition and artificial intelligence as applied to recognition of blood cells, and clinical studies of the effect of diseases and treatment of diseases in patients.

Inquiries regarding the fellowship program should be addressed to the section director.

### Section of

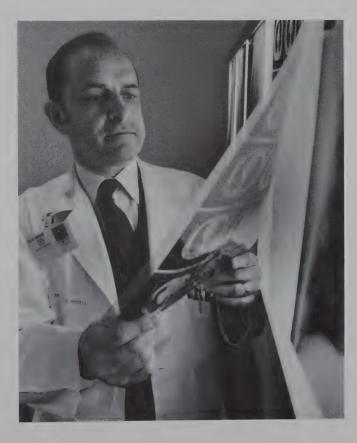
### Infectious Disease

Stuart Levin, M.D., The James Lowenstine Professor of Internal Medicine and Director Gordon Trenholme, M.D., Professor of Internal Medicine and Associate Director

The Section of Infectious Disease provides consultation and care for patients with hospital- and community-acquired infections. The section is also responsible for surveillance and control of outbreaks of infection within the hospital, through the activities of the hospital epidemiologist and four nurse epidemiologists. Rush is one of two NIH funded AIDS treatment centers in Chicago. Teaching activities include daily hospital teaching rounds, a lecture course on the pharmacology of antimicrobial agents, and a series of lectures in the second-year medical school curriculum on the patho-physiology of infectious disease. A weekly three-hour research and case discussion conference is held. The laboratory of the section is available for investigative activities. Current

areas of research interest include: (1) clinical, pharmacological and efficacy studies of new antibiotics; (2) studies on the evolution of antibiotic-resistant organisms; (3) AIDS and its complications: (4) the development of rapid methods of identification of etiologic agents of infection: (5) laboratory investigation of agents effective against hepatitis B, clinical and basic studies regarding the acquired immune deficiency syndrome; (6) investigation of pathogenosis and therapy of infectious diarrheas including Campylobacter fetus; (7) Lyme disease entymology, epidemiology, serology and therapy; (8) HIV - virology; (9) HIV - therapy; (10) HIV - immunology; (11) antiviral chemotherapy - herpes, CMV and zoster; (12) malaria chemotherapy; (13) chlamydia infections - therapy and in vitro susceptibility studies; (14) antifungal therapy utilizing new agents; (15) endotoxemia and gram negative sepsis; (16) erythropoetin therapy - the use of erythropoetin in AIDS patients; (17) prophylaxis and therapy of Pneumocystis carinii pneumonia; (18) hospital epidemiology of nosocomial infections; (19) health department collaboration for city-wide infection outbreaks. Members of the section serve as consultants to the City of Chicago Department of Health and are involved with investigations of citywide outbreaks of infections.

Members of the resident staff are assigned for two-month rotations. Two- or three-year fellowships are available after the third year of residency training in medicine. Applications for fellowships should be made to the program director, Gordon M. Trenholme, M.D., associate director.



### Section of

### Nephrology

## Edmund J. Lewis, M.D., Director

Patients with various primary and systemic lesions of the kidney and genitourinary tract, or electrolyte and metabolic problems are studied and treated by the staff of the nephrology section. There is a special interest in the diagnosis and therapy of patients with collagenvascular disease. The laboratories of the unit are available for many special studies, including immunological investigations of serum and renal biopsy material. The application of plasma-exchange therapies to several diseases. especially lupus erythematosus, is under active investigation. There are active acute and chronic dialysis programs. Patients with chronic intermittent dialysis or transplantation are cared for by the staff of the section.

The section is pursuing research on several immunological aspects of renal disease. Systemic lupus and cryoglobulinemia are a particular area of interest. A cell biology program is being carried out in concert with members of the Department of Pathology.

There are daily clinical conferences with the renal pathologists to review tissues from patients who have had renal biopsies. Each week, there are regular research meetings, a renal pathology conference, a renal-urologic-radiologic conference, and a nephrology conference.

Members of the resident staff are assigned to the section for one- or two-month rotations, and research fellowships are available at the end of the third year of residency training. Applications for fellowships should be made to the section director.

### Section of

### Oncology

### Jules E. Harris, M.D., The Samuel G. Taylor III, M.D., Professor of Oncology and Director

The educational program of the Section of Oncology emphasizes that patients with cancer may live long, productive, and useful lives if properly treated. Each year, the Section of Oncology sees approximately 1,200 new cancer patients, who provide an ample and varied spectrum of oncological problems. The residents and fellows follow and study these patients under the direction of members of the section. New patients and problems are discussed at bi-weekly meetings.

The section's program stresses the importance of a combined approach to tumor therapy using the resources of the departments of surgery, therapeutic radiology, pathology, and nuclear medicine. There are weekly breast tumor. lymphoma, and gynecologic tumor conferences. The section is also involved in many of the clinical trials sponsored by the Eastern Cooperative Oncology Group, National Surgical Adjuvant Breast Project, and the Gynecologic Oncology Group. Pilot studies involving chemotherapy and immunotherapy with emphasis on the clinical study of interferon and other biological response modifiers are undertaken in association with the institution's affiliated network of hospitals.

The section has an active research program in human and experimental tumor immunobiology. These investigations involve animal studies concerned with the immunogenetics of tumor graft rejection and clinical studies examining the effect of cytotoxic drugs on immunoregulatory mechanisms in solid tumor cancer patients. Re-

search opportunities are available in both areas of investigation for students, residents and fellows.

A four-to eight-week rotation stressing clinical aspects of cancer is offered for residents. One- to three-year clinical fellowships are available and provide in-depth training in medical oncology, with rotation through related clinical fields and laboratories offered to selected trainees. The fellow is prepared for board certification in medical oncology. Application should be made to the section director.

### Section of

### **Pulmonary Medicine**

Roger C. Bone, M.D.
The Ralph C. Brown, M.D.,
Professor of Internal Medicine
and Director

The Section of Pulmonary Medicine provides specialized consultation service for patients with diseases of the lungs and thorax and the critical care unit. In addition to the clinical service, the section is responsible for the pulmonary laboratory, chest physical therapy and respiratory therapy. Fiberoptic bronchoscopies and other special procedures are performed.

The fellowship generally lasts three years and offers extensive participation in all of the above. Fellows manage an outpatient clinic held once a week. Supplementary rotations through intensive care, allergy, infectious disease and chest surgery round out the experience. Much of the teaching is on a personal basis. The section conducts three conferences a week. Research experiences are broad but focused around intensive care medicine, both clinical and basic aspects.

The followship prepares candidates for the specialty board of pulmonary medicine and critical care. Prerequisites for the fellowship are three years in the approved residency program in internal medicine or the equivalent and board eligibility in internal medicine.

Inquiries should be directed to Peter Szidon, M.D.

### Section of

### Rheumatology

Thomas J. Schnitzer, M.D., Ph.D., The Willard L. Wood, M.D., Professor of Rheumatology and Director

The Section of Rheumatology provides primary clinical, consultative, and procedural services in the diagnosis and management of rheumatic diseases and complaints. The section is actively engaged in clinical and basic science research and participates in the medical education process at the basic science and clinical levels.

Students and residents rotate through the section on one month electives. Under the supervision of fellows and attending staff, the trainees evaluate patients in both an inpatient and outpatient office setting. They learn the procedures. diagnostic, and management skills necessary to correctly identify and care for patients with problems of a rheumatic nature. During the month-long rotation, trainees are typically exposed to most of the common and many uncommon rheumatic diseases and problems. Teaching is done both at the bedside and in formal weekly conferences. A weekly clinical conference is held in conjunction with the rheumatology sections of Cook County and the University of Illinois hospitals. In addition, an x-ray conference, a journal club, and a research conference with invited guest speakers are held by the section on a tri-weekly rotating schedule.

Fellowships of two years with a

possible third year are offered leading to eligibility for certification in the subspecialty of rheumatology by the American Board of Internal Medicine.

Inquiries regarding fellowships and for rotations by students and residents should be addressed to the program director.

## Department of Neurological Sciences

## Jacob H. Fox, M.D. The Jean Schweppe Armour Professor of Neurology and Chairman

Russell Glantz, M.D., Residency Director

A group of integrated research/ clinical care programs organized around specific diseases and spearheaded by clinical investigators serves as the core for the overall activities of the department. The major areas which all represent important clinical problems and related basic science issues include:

- 1. Cerebrovascular disease
- 2. Dementia
- Epilepsy
- 4. Multiple Sclerosis
- Neuromuscular diseases, and
- 6. Parkinson's disease and related movement disorders.

The research program thus extends from studies of molecular and electrical phenomena of the nervous system and subcellular structure of nerve cells to the function of the brain as a whole in health and disease, with a major emphasis on clinical neuropharmacology.

The Department of Neurological Sciences offers a three-year residency in neurology. The residency program is accredited by the Liaison Committee of the American Medical Association and the American Board of Psychiatry and Neurology. Four residents are accepted each year into the program. One year in a postgraduate program in general internal medicine is a prerequisite.

The focus of the program is to train well-rounded clinical neurologists with a strong background in, and understanding of, basic neurobiological sciences. The first year of the neurology residency consists of 12 months of clinical neurology spent on inpatient and consultation services. Currently, eight months are spent at Rush-Presbyterian-St. Luke's Medical Center and four months are spent at Christ Hospital and Medical Center.

The second year consists of rotations in electroencephalography, electromyography, neuroradiology, pediatric neurology, neuropathology, and clinical neurology. During the third year, the resident spends six months acting as senior resident and six months in elective rotations. Elective rotations during the third year are chosen after consultation between the resident and the program director.

All patients admitted to the neurologic service are available for teaching and clinical experience. These patients suffer from a broad range of neurological problems including movement disorders, multiple sclerosis, epilepsy, neurodegenerative and cerebrovascular disease. Active teaching clinics are also conducted in the private outpatient offices of faculty of the Department of Neurological Sciences and include specialized clinics in epilepsy, muscular dystrophy, multiple sclerosis, dementias and movement disorders. Throughout the three-year program residents have primary care responsibility for outpatients in the neurology clinic.

A major strength of this program is the close contact between the faculty and the small number of selected residents. Teaching rounds are made six days a week on each of the two clinical services. Weekly teaching sessions include

chairman's rounds, brain cutting, neuroradiology, neurology grand rounds, neurology basic science conferences (for residents only) and research meetings. In addition, residents have significant teaching responsibilities including both clinical teaching and assisting in neuro-anatomy laboratory. Extensive clinical and preclinical research is being carried out in a wide variety of

areas by members of the department. Residents are urged to participate in these programs at some time in their training. There is close interaction between residents and Ph.D. neuroscientists and other members of the department.

Fellowships are offered in EMG, EEG, and movement disorders/neuropharmacology. Inquiries should be directed to the program director.

## Department of Pediatrics

### Samuel P. Gotoff, M.D., Woman's Board Professor of Pediatrics and Chairman Director, Pediatric Residency Program

The Department of Pediatrics offers a three-year residency leading to certification by the American Board of Pediatrics.

The Department of Pediatrics is engaged in patient care, teaching and research. Clinical programs range from neonatal and pediatric intensive care to secondary and tertiary care on general inpatient units to a variety of ambulatory care programs. Residents staff continuity care clinics and the emergency room under supervision and rotate through an HMO and private pediatrician offices as well as Rush specialty clinics, Shriners Hospital for Crippled Children and Misericordia Hospital. Rush serves as a perinatal center for a network of ten community hospitals providing transport services for critically ill newborns and children.

Research questions include the following:

- Human Monoclonal Antibodies Against Group B Streptococcus
- Safety and Immunogenicity of Acellular Pertussis Vaccine
- Immunobiology of Amyloid P Component
- Protein-bound Homocystine in Patients with Coronary Heart Disease

- Antibiotic Prophylaxis in Patients with Cystic Fibrosis
- Assessment of Headache in Ambulatory Children
- Treatment of Childhood Malignancies
- Immunoprophylaxis of Neonatal Infections
- Prenatal Diagnosis of Dihydropteridine Reductase Deficiency
- Long-term Neurodevelopment Follow-up of Intracranial Hemorrhage and Periventricular Leukomalacia in Premature Infants
- Pain Assessment of Hospitalized Children
- Insulin Interaction with the Testis: Binding and Biologic Effect
- Growth Failure in Children with Renal Disease
- Prevention of Neonatal Necrotizing Enterocolitis
- In Utero Cocaine Effect on Postnatal Respiratory Control

## Rush-Presbyterian-St. Luke's Medical Center

Ten residents are matched each year. Nine rotations are at Presbyterian-St. Luke's Hospital. There is one rotation on the general inpatient service at Christ Hospital and Medical Center to expose the resident to suburban practice. In the second year, the Rush resident has one rotation in the Christ Hospital and Medical Center emergency medicine program to increase ex-



posure to major trauma, minor surgery and orthopedics.

Each resident, at every level, participates in a continuity of care clinic one-half day each week during the three years of residency. The clinic is supervised by the same preceptor throughout the year, and the residents are guided by a curriculum (outline and references) in primary care pediatrics. Each afternoon begins with a conference on a primary care topic. Residents then see well children for routine care of children with acute or chronic problems for whom they have continued responsibility.

Night and weekend call is every fourth night throughout the three years. Each year, there is a threeweek vacation (usually divided in two parts) and one week for educational leave to pursue in-depth study or attend a meeting.

The teaching program consists of morning report, attending rounds, professors' rounds, grand rounds, change-over rounds and lectures in pediatrics. Introductory lectures in pediatrics are given during the sum-

mer. Subsequently, the lecture/conference series includes pediatric medical and surgical subspecialties, research, basic sciences, ethics, morbidity and mortality conferences, and a journal club.

Approximately 8 to 16 medical students are assigned for an eight-week clerkship in pediatrics. Family practice residents from the Rush/Christ and other Chicago hospital programs also rotate through the pediatric services.

The Pediatric Residency Program is based on the philosophy that there is a logical progression of skills which should be mastered during each year of pediatric training. The first year emphasizes the acquisition of information-gathering skills (history taking and physical examination), identification of problems, assessment of the degree of illness, mastery of technical skills, and learning to care for children with acute and chronic diseases. For the most part, these experiences take place on an inpatient service under

the supervision of senior residents

and faculty.

The second-year resident is then prepared for independent management of diverse and unselected pediatric problems in an acute care or emergency room setting. In the second as well as the third year, the resident will elect subspecialty areas for indepth study. Except for neonatal intensive care and critical care pediatrics, specific subspecialty rotations are not required. However, a sufficient number of subboard approved subspecialty rotations must be selected to fulfill Residency Review Requirements.

The third year of pediatric training emphasizes supervision of inpatient units, responsibility of the most complex problems, and interaction with consultants and other members of the health care team. The third-year resident is expected to stabilize and transport acutely ill newborn infants and older children to the Medical Center. Third-year residents with special skills in patient care and teaching are chosen to serve an additional year as fourth-year chief residents. These fourth year level residents help oversee and supervise academic and clinical activities.

### Section of

### Adolescent Medicine

### Gary R. Strokosch, M.D., Director

The focus of the Section of Adolescent Medicine is the comprehensive health care of patients approximately 12 to 21 years of age. The 19-bed inpatient unit at Rush-Presbyterian-St. Luke's Medical Center provides the setting for inpatient training. Outpatient facilities at Rush-Presbyterian-St. Luke's Medical Center, and Christ Hospital and Medical Center provide the setting for ambulatory training.

### Section of

### Allergy/Clinical Immunology

### Anita T. Gewurz, M.D., Director

The Allergy/Clinical Immunology Program is a combined pediatric/internal medicine training program which emphasizes care of patients with allergic, autoimmune and immunodeficiency disorders. Patients are seen in an outpatient clinic and on inpatient pediatric and medicine units of Rush-Presbyterian-St. Luke's Medical Center. Research opportunities are available in the Department of Immunology/Microbiology in a variety of areas, including the biology of the allergic response, host defense mechanisms, the acute phase proteins, and complement. Elective rotations are available for residents, and a two- or three-year fellowship program is approved by the American Board of Allergy and Immunology.

### Section of

### **Behavioral Pediatrics**

## Anthony J. Richtsmeier, M.D., Director

Behavioral pediatrics is a consultation service for a wide variety of pediatric problems that have a strong psychological and/or social influence. There is a special emphasis on integrating psychosocial and biological factors in the assessment and care of children and families. Services are available for difficulties that arise during infancy, early childhood, middle childhood and adolescence. Behavioral pediatrics works closely with the Sections of Child Psychiatry and Psychiatric Psychology. The Section of Behavioral Pediatrics is



active in teaching on the clinical services and electives are available for house staff and students.

### Section of

### **Emergency Services**

### Jane Kramer, M.D., Director

The program is designed to prepare the resident to care for the acute care needs of children and adolescents. Residents provide 24-hour, on-site coverage in the emergency room at Rush with continuous consultation by the pediatric faculty and supporting consultation services. Approximately 12,000 patients are seen annually.

### Section of

### **Pediatric Cardiology**

### H. Gunther Bucheleres, M.D., Director

The patient population served by the section originates from within and outside of the Rush network system as well as from various local and state agencies. The section staff participates in undergraduate and graduate medical educational programs.

The curriculum covers both the clinical and laboratory diagnosis of pediatric heart disease. Clinical conferences, ward rounds and ambulatory settings develop the train-

ee's experience in diagnosis and management. The trainee participates in intraoperative and postoperative patient care.

### Section of

### Cytogenetics and Biomedical Genetics

### Paul Wong, M.D., M.Sc., Director

This section provides clinical and laboratory training in genetics for pediatric and obstetric residents, as well as other residents. Electives are also available for medical students. Participation in research may be arranged.

Clinical training includes: evaluation and treatment of infants and children with physical malformations, mental retardation, metabolic disorders, and other inherited diseases; couples with fertility problems, recurrent miscarriages or abnormal children; patients with abnormal sexual development; older pregnant women, and women with a history of genetic problems.

Laboratory training includes chromosome studies in blood, bone marrow, amniotic cells, and CVS as well as biochemical studies.

Research activities are focused on the pathophysiology of homocysteinemia in vascular diseases.

### Section of

### Endocrinology and Metabolism

### Paul Mueller, M.D., Acting Director

This section provides inpatient consulting services and outpatient clinics for children with endocrine disorders, growth problems and diabetes mellitus. Elective opportunities are provided.

### Section of

### Pediatric Hematology/Oncology

### Alexander M. Green, M.D., Director

The Section of Pediatric Hematology/Oncology provides services for inpatient and outpatient care of children with serious disorders of the blood, or malignant tumors. As participants in the Children's Cancer Cooperative Study Group, patients with leukemia or certain solid tumors are treated under regimens directed by protocol studies designed by this group. Residents actively participate in the bone marrow transplant program.

### Section of

### Infectious Diseases

### Kenneth M. Boyer, M.D., Director

Caring for children with infectious diseases is the most frequent service provided by the practicing pediatrician. The Section of Infectious Diseases offers consultation in the management of children with serious infections and the diagnosis of problems likely to have an infectious etiology. Residents provide consultations under the supervision of the section director, participate in daily rounds and two weekly conferences, teach pediatrics to elective students, and are encouraged to pursue study of their patients indepth. Residents may also elect to spend four weeks in a small-scale independent research project in which development, analysis, and presentation of clinical or epidemiologic data is emphasized. Residents on elective are encouraged to become familiar with the ongoing research programs in the section dealing with the immunology of neonate group B streptococcal infections and chemotherapy of congenital toxoplasmosis.

### Section of

### Neonatology

### Werner Meier, M.D., Director

The Section of Neonatology provides medical and surgical services for the inborn, transferred and follow-up population. Rush-Presbyterian-St. Luke's Medical Center and Christ Hospital and Medical Center admit approximately 7,000 babies per year.

The Rush Perinatal Center serves 12 designated hospitals with 21,000 deliveries a year in the northeastern Illinois region. Rush was designated a perinatal center by the Illinois Department of Public Health in 1975. Patients in the Rush perinatal network are admitted to one of three level III units from the "in-born" deliveries of individual hospitals and from the community hospitals via a highly specialized transport system for sick infants.

Pediatric, obstetric and anesthesiology residents from Rush and family practice residents from the Rush network rotate through the newborn service at Rush. Patient care and educational programs tailored for the year of training are emphasized; research activities are available and supported by specialty services. Elective rotations for senior medical students are strongly encouraged.

Outpatient programs provide continuity of care for babies with problems related to the perinatal period that continue after discharge. The continuity of care clinic coordinates through general pediatrics. A long-term, multidisciplinary, follow-up program is conducted which includes social services, psychology,

physical and occupational therapy, neurology and other required subspecialties; this and the apnea program dealing with irregularities of the breathing patterns are coordinated by the Section of Neonatology.

### **Pediatric Nephrology Program**

### Jonathan Heiliczer, M.D., Director

Activities in this program include both diagnostic and therapeutic management of all renal problems seen in children, ranging from those of a structural nature through those of immunologic import. Implicit in this program is a close liaison with the urology service, in an effort to provide an integrated approach to small children with congenital or acquired structural abnormalities. Acute as well as chronic peritoneal and hemodialysis are available in addition to an acute transplant program.

### Section of

### **Pediatric Neurology**

### Peter T. Heydemann, M.D., Director

The Section of Pediatric Neurology offers postgraduate training for residents in pediatrics, neurology, family practice, neurosurgery, and psychiatry. Electives are designed to meet the needs of the varied backgrounds and interests of the individual house officer. Responsibilities may include inpatient management, child neurology consulations (outpatient, child neurology visits, care of multiplehandicapped children, e.g., meningomyelocele), and clinical care in the muscular dystrophy clinic. Regular conferences offer opportunity for didactic learning as well as resident presentations.

### Section of

### **Pediatric Psychology**

### Cecilia Brocken, Ph.D., Director

Pediatric psychologists in the section provide services to the pediatric patient—infancy through young adulthood—on both an inpatient and outpatient basis. A broad range of diagnostic, therapeutic and consultative services emphasizes early assessment and intervention, family involvement and close collaboration with medical and other health care staff.

The faculty, an interdisciplinary group coordinated by the section director, are responsible for teach-

ing the developmental/psychosocial curriculum of the pediatric residency training program. In addition to the educational opportunities inherent in the collaborative patient care which characterizes the pediatric service, formal training activities in developmental, psychosocial and behavioral aspects of patient care are provided in a required subspecialty rotation.

### Section of

### **Pulmonary Diseases**

### Lewis Gibson, M.D., Director

This service cares for a large number of children with cystic fibrosis and bronchopulmonary dysplasia. An active pulmonary function laboratory supports the program.

# Department of Physical Medicine and Rehabilitation

### John J. Nicholas, M.D., Acting Chairman and Program Director

The Department of Physical Medicine and Rehabilitation at Rush offers a coordinated program of comprehensive services—both inpatient and outpatient—to provide a continuum of care by specialists in the evaluation and treatment of the physically disabled. Services are focused on patients' achievement of their maximum levels of physical, psychological, social and vocational potentials.

Depending on their particular needs, patients may be directed to one of three locations.

- Marianjoy Rehabilitation
   Center
   Wheaton, Illinois
   (100 beds)
- Johnston R. Bowman Health Center for the Elderly Chicago, Illinois (66 beds)

Oak Forest HospitalOak Forest, Illinois(65 beds)

These centers have a multidisciplinary staff of 20 board certified physiatrists, plus specialists in rehabilitation nursing, physical therapy, occupational therapy, speech/language pathology, neuropsychology, social work and vocational counseling.

In 1985, Rush Medical College established the Department of Physical Medicine and Rehabilitation (PM&R) and developed an affiliation agreement with Marianjoy Rehabilitation Center. In July, 1986, the department established the PM&R residency program and began with four residents at Marianjoy Rehabilitation Center. In July, 1987, seven new residents were enrolled and new training sites were established at the Johnston R. Bowman Health Center for the Elderly, and Oak Forest Hospital. The program reached capacity of 21 residents in July, 1989.

The combined resources of Rush-Presbyterian-St. Luke's Medical Center (RPSLMC), Marianjoy Rehabilitation Center (MRC), and Oak Forest Hospital (OFH), are now linked to provide a broad-based training program for physicians desiring to specialize in physical medicine and rehabilitation. In addition, rotations are available through a variety of clinics including community, acute care and freestanding rehabilitation sites that provide a resident with the necessary education and experiences to prepare him/her not only for board examinations, but for entry into the practice of physical medicine and rehabilitation.

The goal of the affiliated residency program for physical medicine and rehabilitation residents is to provide a clinical and didactic program to meet the training requirements of the Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Physical Medicine and Rehabilitation (ABPM&R), while providing a stimulating and broad-based experience for physicians in the residency program.

The objectives supporting the above goal include the following:

- A 36-month residency program to include strong clinical science training in the first year and a half of the residency program;
- Provision of a broad-based experience in physical medicine and rehabilitation including inpatient, outpatient, consultation service and technical skill training within the affiliated institutions;
- The provision of a didactic basic science program to include the fields of anatomy, functional anatomy, kinesiology, clinical physiology, neurophysiology, pathophysiology, pathology and radiology;

- Provision of formal instruction in the clinical areas of physical medicine and rehabilitation through instructional courses, clinical conferences, journal clubs, seminars, grand rounds and clinical labs;
- Provision of increasing responsibility for the resident through the training program to allow for application of expertise to the point of independent skill application by the fourth year of the residency program;
- Provision of an opportunity to learn the administrative and management aspects of rehabilitation through observation, administrative labs, program evaluation review and management evaluation review;
- 7. Provision of an opportunity for innovative research through involvement with Rush Medical College faculties and the Department of Research and Evaluation of the Marianjoy Rehabilitation Center;
- 8. Provision of an opportunity, through the Center of Occupational Health and Rehabilitation, to relate to industry, insurance companies and the legal profession the problem of work-related disabilities; to gain exposure to the legal ramifications of the Workers' Compensation law; and to learn how to give a deposition and court testimony.

In accordance with the recommendation of the ACGME and the ABPM&R, 12 of the 48 months of residency training will consist of a coordinated program of experience in fundamental clinical skills, including six months in family practice, internal medicine, pediatrics, or general surgery, or a combination of these. The other six months of experience may include no less than one month in any of the following more specific categories: cardiology, radiology, neurology, urology,

rheumatology, nephrology, vascular medicine, pediatrics, pulmonary medicine, neurosurgery, orthopedic surgery, family practice, general surgery, general internal medicine, emergency medicine, psychiatry, oncology, critical care medicine and anesthesiology.

All residents applying to the program will be accepted directly to the formal 36-month period of training after evidence of having successfully completed a one-year ACGME-approved residency program as described above or an accredited "Transitional" year as defined by the ACGME.

The formal 36-month period shall be spent in training at RPSLMC, MRC and OFH. This training will be provided through a series of progressively more responsibilitybased quarters of experience. The quarters are designed to provide early orientation of the resident to the field, progressing to an independent attending role on a senior bed service. Electromyographic, pediatric, outpatient service and electives are included in this program of experience.

In exceptional circumstances and when agreed upon by both program directors, a resident may be accepted in transfer from another residency program; however, no guarantee can be provided that completion of the program will require less than

the 36 months outlined.

Inquiries should be directed to the program director.

## Department of **Psychiatry**

Jan Fawcett, M.D., The Stanley G. Harris, Sr., Professor of Psychiatry and Chairman

Aimee St. Pierre, M.D., Director, Residency Training

The Psychiatry Residency Training Program at Rush-Presbyterian-St. Luke's Medical Center is a fouryear program in general psychiatry offering a developmental approach to the acquistion of the knowledge, skills and attitudes necessary for competency as physician and psychiatrist. Its objectives are to develop sound clinical judgment, and knowledge of the diagnosis, treatment and prevention of psychiatric and common neurologic disorders. The program offers a balance of psychodynamic and biologic psychiatry with opportunity for subspecialization, particularly in psychopharmacology, dynamic psychotherapy, research, geriatric psychiatry, forensic psychiatry, consultation-liaison, and dissociative disorders.

Psychiatry residents at the Medical Center have the opportunity to work with a broad spectrum of patients including emotionally ill children, adults, and the elderly. Clinical experience includes hospitalized patients, as well as outpatients. Residents also provide care annually, through the psychiatric consultation-liaison service, for over 500 medical and surgical patients who experience emotional problems related to their illnesses.

The residency training program of Rush-Presbyterian-St. Luke's Medical Center is accredited by the American Board of Neurology and Psychiatry. The four-year program is divided into four tracks of varying lengths. Each track offers instruction and experience in specific areas of psychiatry, coordinating clinical rotations with didactic work and supervision.

Track I (18 months)

Medicine and neurology rotations, rotations on inpatient open and closed psychiatric units and geriatric psychiatry unit.

Track II (15 months)

Rotations in consultation-liaison, outpatient and child psychiatry.

Track III (3 months)

Rotations designed to develop understanding of psychiatric administration, teaching, supervision and related clinical skills.

Track IV (11 months) Elective rotations.

At the Marshall Field IV Center, the administrative base of the Department of Psychiatry, are the following ambulatory services: Adult Outpatient Clinic; Treatment Research Unit designed to conduct outpatient treatment research protocols; Dissociative Disorders Program focusing on the treatment of multiple personality disorder and other dissociative disorders; and the Rush Day School/Children's Partial Hospitalization Program, a

program for children combining daily classroom instruction and therapy. These outpatient services are staffed by faculty, residents, psychiatric nurses, psychologists, and social service professionals, and average 900 patient visits per month.

Presbyterian-St. Luke's Hospital has a general psychiatric open unit with 31 beds; an intensive care psychiatric unit with 19 beds; a psychiatric stress unit with 11 beds; and child psychiatry unit with 15 beds. At the Johnston R. Bowman Health Center for the Elderly there is a 22-bed geriatric psychiatry unit where treatment is tailored to the needs of older patients. Rush North Shore Medical Center has an alcohol and substance abuse pro-



gram, an inpatient psychiatric unit with 30 beds for general psychiatric patients; and a Dissociative Disorders Unit with 15 beds for the treatment of patients with multiple personality and post-traumatic stress disorders. There is a total of 143 psychiatric beds in the Medical Center which have, on an average, a 95 percent occupancy.

Under the codirection of Michael F. Basch, M.D., and Arnold I. Goldberg, M.D., the Center for Psychotherapy has been developed within the outpatient section of the department. It has three components: education, service and research. The center directs training in interviewing skills in Track I, courses in beginning and advanced dynamic psychotherapy and theory in Tracks I-IV, and an intensive individualized elective for residents in Track IV. Post-residency training in dynamic psychotherapy is also offered.

Currently the department offers one-year postgraduate fellowships in consultation-liaison, forensic, geriatric and dissociative disorders psychiatry, as well as a two-year program in child psychiatry. The

Consultation-Liaison Service is directed by Stephanie von Ammon Cavanaugh, M.D.; the Section of Psychiatry and the Law, by James L. Cavanaugh, M.D.; Geriatric Psychiatry, by Lawrence W. Lazarus, M.D., and Andrew Ripeckyj, M.D.; the Section of Child Psychiatry, by Elva Poznanski, M.D., and Margery Johnson, M.D.; and the Section of Dissociative Disorders, by Bennett Braun, M.D.

The following research projects are ongoing within the department: Collaborative Depression Study: Psychobiology of Affective Disorders: Alcoholism and Lithium Drug Studies: Treatment of Mentally Disordered Offenders; Self Psychology and Psychotherapy: Treatment of Depression Study; Cognitive Therapy: Depression in Medically III Patients: Anhedonia and Affect Deficit States; Psychobiology of the Elderly; Phenylethylamine in Affective Illness: and Violence and Suicide in Adolescents and Children and the Elderly.

Inquiries should be addressed to Aimee St. Pierre, M.D., Director of Residency Training.

## Department of Psychology and Social Sciences

## Rosalind D. Cartwright, Ph.D., Chairman

Martita Lopez, Ph.D., Director of Clinical Training

The Department of Psychology and Social Sciences is an independently organized department of Rush Medical College, The Graduate College and Presbyterian-St. Luke's Hospital. Departmental members are responsible for a behavioral sciences curriculum in the Medical College and participate in course offerings in the College of Nursing. The department also offers a Ph.D. program in health psychology through The Graduate College.

The department provides clinical psychological services on a consult-

ation basis to all inpatient medical departments. These services include answering general behavioral diagnostic questions, provision of short-term psychological interventions, and liaison with medical staff providers. In addition, diagnostic and intervention services are provided through specialized programs in cancer, gerontology, neuropsychology, pediatric psychology, pain and stress management, and sleep disorders. Outpatient services are also provided for diagnosis and management of marital and sexual problems, for cognitive remediation, and for disorders of sleep and wakefulness.

The department is also heavily involved in research endeavors in many aspects of interaction be-

tween psychology and medicine. A sampling of currently active research topics includes: cognitive and affective changes in patients with Parkinson's disease; assessment during the WADA procedure; innovative treatments of sleep apnea; role loss, depression, and dreaming; use of lights for resetting circadian rhythms; behavioral studies of myotonic dystrophy; chronic hallucinosis in Parkinson's disease; assessing the changes in quality of life in patients with cancer; evaluation of malingering in patients with low back pain; sleep and psychological characteristics of patients with fibrositis; and cognitive decline in normal aging and in CNS disorders in the elderly.

The department offers a pre-doctoral clinical psychology internship program which is fully accredited by the American Psychological Association. Students apply to one of

four specialty training programs in the internship; Clinical Child Psychology, Health Psychology and Clinical Neuro-psychology, and Rehabilitation Psychology. Approximately 60 to 70 percent of the intern's time is spent in specialtyrelated training during the internship year, with the remaining time devoted to more general intern experiences, conferences, and seminars. All programs are designed to fulfill the internship requirement for doctoral programs in clinical psychology. The department also offers postdoctoral fellowships in geropsychology and psycho-oncology.

Supervision in training is provided by a staff of 25 clinical psychologists and two physicians. The internship and postdoctoral fellowships begin on July 1. Inquiries should be directed to Martita Lopez, Ph.D., Director of Clinical Training.



# **Surgical Sciences** and Services

L. Penfield Faber, M.D.

Associate Dean for Surgical Sciences and Services and Associate Vice President for Medical Affairs

## Department of Anesthesiology

## Anthony D. Ivankovich, M.D. The William Gottschalk, M.D., Professor of Anesthesiology and Chairman

The Department of Anesthesiology offers a four-year residency program approved by the American Board of Anesthesiology. The anesthesiology house staff consists of 33 residents. The program is an integrated, progressive, clinical experience directed toward the residents' acquisition of a broad scientific background and the clinical expertise necessary to provide excellence in their performance of anesthesiology functions for the rest of their professional lives.

To accomplish these goals, and in conjunction with the requirements of the American Board of Anesthesiology, the program is divided into a "clinical base" year (PG-1) and the "clinical anesthesia training" vears (CA-1, CA-2, CA-3). Following an extensive two-month orientation and introduction to the field of anesthesiology, the first-year resident begins a clinical base year designed to provide a solid background in the fields of medicine which are in constant interplay with anesthesiology. During this 12month period, outside the Department of Anesthesiology, the residents train in medicine, surgery, pediatrics, and other fields which are of importance to anesthetic practice. After four months of mandatory rotations in internal medicine and/or surgery, the resident has the choice of training in such specialized areas as cardiology, pulmonary medicine, nephrology, endocrinology, cardiovascular surgery, obstetrics, thoracic surgery with bronchoscopy experience and high-risk neonatology. Thus the clinical base year should give residents the background necessary to deal with the respiratory, cardiovascular, and other medical problems which are important components of anesthetic practice.

During the clinical anesthesia training years (CA-1, CA-2, CA-3), under the direct supervision of the academic staff, residents are given increasing responsibilities in the management of patients undergoing anesthesia in the operating room, the labor and delivery suite, and special care areas such as radiology and the neonatal intensive care unit. With increasing maturity, residents are assigned to anesthesia specialty areas such as neurosurgery, cardiovascular surgery, obstetrics, the surgical intensive care unit, and the Pain Center. Supervision of the residents is established on a one-to-one basis with a member of the faculty during their early training and for complex cases.

The residents' fourth year of training (CA-3) follows the guidelines set forth by the American Board of Anesthesiology but is flexible enough to meet the individual needs of the resident as he/she finishes training and prepares for entry into anesthetic practice. Depending upon the resident's previous performance and anticipated practice needs, the resident and program director collaborate to select one of the three tracks designated as the "Advanced Clinical Track," "Subspecialty Clinical Track," or "Clinical Scientist Track." Regardless of the track selected. residents in the CA-3 year will be assigned to the more difficult or complex anesthetic procedures or to the most seriously ill patients. Active participation in the department's Pain Center, in an area of research, or in the ongoing kidney, liver or heart transplant programs would also be available for the senior resident. In addition, the resident who chooses to take the Clinical Scientist Track in his/her CA-3 vear, followed by six months of additional research work, may receive a Master of Science Degree in Pharmacology.

Our department's research efforts

encompass both basic sciences and clinical investigation. To develop and improve research skills the residents' participation is encouraged at all levels of training. A few of the ongoing areas of laboratory investigation are the development of a new non-invasive method to determine cardiac output and vascular dynamics, a chronic atherosclerotic swine model for the study of anesthetic effects on the aging myocardium, the role of anesthetic agents and dosages on epileptic seizures, mechanisms of local anesthetic cardiotoxicity, novel methods of drug delivery, a model for the development of new ancioceptive agents, the use of the thromboelastogram for the diagnosis of experimental coagulopathies, the role of alkalinization in respiratory acidosis and a model for the study of anesthetics and adjunct agents in an animal model of superventricular tachydysrhythmias. Clinical areas of investigation are focused on the epidemiologic effects and improving the safety and efficacy of anesthesia and pain management. These include a study of the effects of anesthetics on morbidity and mortality following open heart surgery, reducing nausea and vomiting postoperatively,

the effects of anesthetic induction agents on intraocular pressure, the use of thromboelastography to access coagulation status after open heart and peripheral vascular surgery, and the use of continuous epidural local anesthetic-narcotic infusion for postoperative pain management.

A weekly three-hour didactic lecture series (that continues throughout the three years of clinical anesthesia) forms the core of our residents' academic training. These lectures are supplemented with weekly grand rounds, tutorials, visiting professors, a journal club, participation at the Illinois Society of Anesthesia Study Commission, and the meetings of the Chicago Society of Anesthesiology which combine to make the program a highly structured one, both inside and outside the operating theater.

The Department of Anesthesiology offers an academic environment combined with an excellent clinical experience that will prepare the residents well for their future role as consultants and practitioners of anesthesiology. Inquiries concerning the program should be directed to Anthony D. Ivankovich, M.D., Chairman, in care of Donna Ritacco, Education Coordinator.

## Department of Cardiovascular/ Thoracic Surgery

Hassan Najafi, M.D., Chairman and Director, Section of Cardiovascular Surgery Giacomo A. DeLaria, M.D., Director, Section of Vascular Surgery C. Frederick Kittle, M.D., Director, Section of Thoracic Surgery

The Department of Cardiovascular/ Thoracic Surgery offers two- and three-year residency programs in cardiac thoracic and vascular surgery accredited by the American Medical Association. The three sections have separate patient care functions, but share a strong, common goal in the training program. Two residents are appointed each year on July 1. Completion of an approved surgical residency and eligibility for examination by the American Board of Surgery are prerequisites for consideration. Applicants in this program who have successfully completed their training requirements are then eligible for examination by the American Board of Thoracic Surgery. Residents accepted for the additional year in vascular surgery are also eligible to obtain the certification of added qualification in vascular surgery through examination by the American Board of Surgery.

The focus of training in the department is directed toward providing opportunity for the resident to obtain an appropriately progressive education in the field of cardiac, vascular and thoracic surgery and encouraging clinical research and publications.

The major clinical rotations include three months at Children's Memorial Hospital in Chicago, six months of senior responsibilities in peripheral vascular surgery, nine months of senior responsibilities in general thoracic surgery and 12 months of senior assignments in adult and congenital cardiac surgery. There is one year of senior responsibility in peripheral vascular surgery for the additional vascular year.

All patients admitted to the service are available for teaching. Daily rounds are conducted by attending physicians and provide excellent training in bedside clinical diagnosis. The department sees approximately 3,000 patients each year. Open heart procedures, ab-

dominal aneurysmectomy, aortic bifurcaton grafting, carotid endarterectomy, femoralpopliteal bypass, and thoracic aortic aneurysm are just a few examples of frequent procedures performed in the cardiovascular surgery section. In thoracic surgery, common procedures include sementectomy, lobectomy, pneumonectomy, decortication bronchoplasty and sleeve resection.

At weekly formal cardiovascularthoracic conferences, cases of interest are presented by participating institutions from the city and suburbs. There is a weekly journal club. A monthly session provides the opportunity for residents to meet invited professors. There is a monthly didactic session in vascular surgery and all residents are provided the opportunity to learn vascular diagnostic techniques in the departments Non-Invasive Vascular Laboratory. Time is also allotted for the teaching of thoracic radiology and pathology by informal instruction and regularly scheduled



conferences. Residents are encouraged to submit papers for publication and presentation to national societies and journals. In addition, residents can choose to attend the scientific sessions of the Society of Thoracic Surgeons, the American Association for Thoracic Surgery, or the Society of Vascular Surgery.

Within the Department, several

programs are readily available to interested residents. If the resident chooses to spend one year in the laboratory prior to clinical education, opportunity will be given to acquire a master's degree in surgery during this period.

Inquiries concerning the program should be directed to the chairman.

## Department of General Surgery

Steven G. Economou, M.D.
The Helen Shedd Keith,
Professor of General Surgery
and Chairman

Herand Abcarian, M.D. Shakeab Alshabkhoun, M.D., Chief, Vascular Service, Christ Hospital and Medical Center Jeffrey E. Anderson, M.D.

Angel Bassuk, M.D., Head, Section of Pediatric Surgery

Achyut Bhattacharyya, M.D., Head, Transplantation Biology Unit

Steven Bines, M.D., Director, Surgical Research Laboratory

Kuo-Ching Chen, M.D., Chief, Service A, Christ Hospital and Medical Center

Anita S.-F. Chong, Ph.D. John S. Coon IV, M.D., Ph.D. Frederic A. dePeyster, M.D.

Daniel J. Deziel, M.D., Associate
Coordinator, Resident Clinical
Activities: Chief-Service I

Alexander Doolas, M.D., Director, Undergraduate Surgical Education; Chief-Service IV

Kambiz Dowlat, M.D.

Preston Foster, M.D. Howard Gebel. Ph.D.

William M. Hopkins, M.D.,

Chief-Service B, Christ Hospital and Medical Center

Stephen C. Jensik, M.D., Ph.D.

Leon R. Kelleher, D.D.S., Director, Section of Dentistry

Deborah S. Loeff, M.D., Associate Head, Section of Pediatric Surgery

Janet L. Meller, M.D. Frederick Merkel, M.D. Keith Millikan, M.D. Nahim H. Nasralla, M.D., Chairman, Department of Surgery; Chief-Service C, Christ Hospital and Medical Center

Jack Roberts, M.D., Associate
Program Director, Department
of Surgery, Christ Hospital and
Medical Center

David L. Roseman, M.D.

Theodore J. Saclarides, M.D., Associate Director, Residency Review

Howard Sankary, M.D.

William D. Shorey, M.D.

Edgar D. Staren, M.D., Associate Director, Surgical Research Laboratory

Albert K. Straus, M.D., Ph.D., Chief-Service II

James W. Williams, M.D., The Jack Fraser Smith Professor of Surgery and Director, Section of Transplantation Surgery; Chief-Service V

Thomas R. Witt, M.D., Coordinator, Clinical Conferences; Chief-Service III

Norman L. Wool, M.D., Coordinator, Resident Clinical Activities

The general surgery training program at Rush University is accredited by the Residency Review Committee for Surgery for five years of training. Seven five-year and nine one-year appointments are available.

The educational program allows the trainee to obtain a well-rounded and progressive education in general surgery and in basic principles of the surgical specialties. The program is integrated at Presbyterian-St. Luke's Hospital (PSLH) and Christ Hospital and Medical Center in Chicago and is affiliated with Children's Hospital National Medical Center, Washington, D.C., and the Trauma Unit and Colo-Rectal Unit of Cook County Hospital in Chicago. Over 21,000 operations are performed annually at the two integrated hospitals.

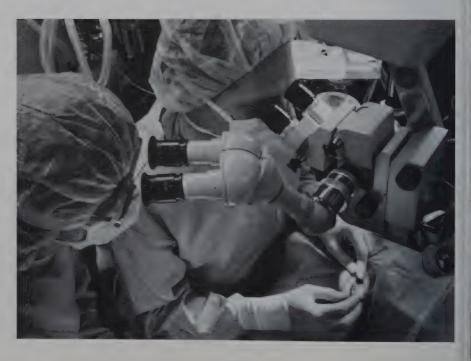
The program is organized as follows: four general surgery services (to include pediatric surgery) and the transplantation services at PSLH; three general surgery services (to include thoracic surgery and pediatric surgery) and the peripheral vascular surgery service at Christ Hospital and Medical Center, two rotations at Cook County Hospital and one at Children's Hospital National Medical Center.

First-year residents spend six months in general surgery; it is divided into three two-month rotations. Additionally, one month each is spent on cardiovascular/thoracic surgery, emergency room and the

Surgical Intensive Care Unit. Two months are available for elective rotations in such specialties as plastic and reconstructive surgery, E.N.T., urology or neurosurgery.

The second year of training completes the core training program in basic surgery. There are seven rotations: four in general surgery, one in orthopedic trauma, one in pediatric surgery at the Children's Hospital National Medical Center, Washington, D.C., and one at the Trauma Unit of Cook County Hospital. The second-year residents begin to participate in the teaching of medical students and first-year residents, assisted by the senior residents and attending surgeons.

Assignments during the third year of residency are more flexible. There are two rotations on general surgical services as well as rotations to anesthesia and surgical pathology. Residents in the program are expected to initiate or participate in research projects. Resources are provided for such activity, which constitutes an important element in a resident's proper training.



In the fourth-year of the program the resident is engaged in full clinical activity, with the residents assuming increased responsibility for the primary management of patient care.

Each fifth-year resident spends the entire year as the chief surgical trainee on one of the general surgery services.

Every board-certifiable specialty in surgery is represented in the program which allows residents to interact with their peers from many disciplines during the care of patients.

Because Presbyterian-St. Luke's Hospital is a tertiary care institution, many of its patients have complex surgical problems. Accordingly a large number of operations are performed within its new, 24-room surgical suite, including some of the most sophisticated and advanced in surgery. The transplant program at Presbyterian-St. Luke's Hospital is the busiest in the city. Christ Hospital and Medical Center has a similarly large number of patients with surgical problems, a higher proportion of which are primary. The affiliated rotations address narrower, but indispensible needs of the residents' training. This varied population of patients offers trainees the full spectrum of a surgical clinical experience.

All residents with each surgical service make patient rounds as a group at least once daily. Informal rounds with attending surgeons are made daily, and formal rounds at different intervals. A broad range of conferences are held throughout the institution, many with surgical orientation and some conducted by the department. These include surgical grand rounds, patient management conference, the surgical reading program, morbidity and mortality conference, journal review, surgical pathology conference, surgical specialty lectures, the tumor conference, breast conference, lymphoma conference, CV

conference, GI conference, and a number of others.

In summary, the program is broadly based, challenging the residents with a large number of patients who have the spectrum of surgical illnesses. The training is offered in a number of desirable settings and in a manner permitting graduated responsibility. It is a program typified as one of strong, academically based general surgery.

#### Section of

## **Pediatric Surgery**

The focus of the Section of Pediatric Surgery at Presbyterian-St. Luke's Hospital is the delivery of optimal care to infants, children, and adolescents with critical problems consistent with the tertiary care commitment of the hospital. House officers are responsible for the pediatric surgical patients during their assignment to the General Surgery Service III. Ward rounds are held regularly. This experience is in addition to that gained at the Children's Hospital National Medical Center, Washington D.C., and at Christ Hospital and Medical Center

#### Section of

#### **Dentistry**

#### Leon R. Kelleher, D.D.S., Director

The Section of Dentistry is a clinically-oriented service whose major academic effort revolves around its General Practice Residency Program. The dental service is fully accredited by the Council on Hospital and Institution Dental Services of the American Dental Association. The General Practice Residency Training Program is fully accredited

by the Council on Dental Education.

The dental service is built around a nucleus of hospital-trained general practitioners and includes representatives of several specialties. The major portion of the clinical experience is in private outpatient treatment, with emphasis on management of the medically-compromised patient.

The training program is flexible, according to the needs and interest of the trainee. It includes a concentrated three-month rotation in pain control, anesthesiology, and in-

travenous sedation. The medical aspects of dental practice and opportunities to participate in treating the handicapped, the aged, and the acute or chronically ill are emphasized. Each resident receives extensive experience in all aspects of oral surgery that might be encountered by a well-trained general practitioner.

Direct inquiries concerning the program to Norman Wool, M.D., Coordinator, Resident Clinical

Activities.

## Department of Neurological Surgery

### Walter W. Whisler, M.D., Ph.D., Chairman

The Department of Neurological Surgery offers one position annually in a six-year, post-M.D. training program approved by the American Board of Neurological Surgery. The clinical aspects of the program are organized around the principle of progressive, graded responsibility with appropriate supervision.

During the first year, time is spent on rotation through general surgery and other surgical departments to develop a broad knowledge of the surgical arts and sciences. The second year is spent in clinical neurosurgery with emphasis on diagnostic neuroradiology. In the third year, there is a six-month rotation in neurology and six months in neuropathology. The fourth year is set aside for research or electives. and the last two years are devoted to clinical neurosurgery. Rotations often can be modified to accommodate special interests.

Training is centered within Presbyterian-St. Luke's Hospital. There are approximately 620 neurosurgical procedures performed per year.

The program is designed to present the basic neurological sciences as well as the practical aspects of neurosurgery. During the year, residents will attend neurology

and neurosurgery grand rounds, brain cutting seminars, and a neurosurgical topic seminar. During the first part of the neurosurgical training, the resident will attend the Cook County Postgraduate Neuroscience Course. Primary among the strengths of the Department of Neurological Surgery is the broad variety of clinical problems that are studied and managed. Besides general cranial, spinal, pediatric, and epilepsy neurosurgery, many microsurgical and stereotaxic procedures are performed.

Research facilities within the Department of Neurological Surgery include laboratories for neurochemistry, neurophysiology and tissue culture: two full-time Ph.D.s are actively engaged in research. Some of the projects that are carried out are done with the cooperation of other departments and other institutions. They include: investigation in motor physiology; spasticity; immunology of brain tumors; implantable drug pumps, and neurotransplantation. Thus, a broad range of clinical as well as experimental projects is being carried out within the department, and there is an opportunity for the interested resident to participate in these activities during residency training.

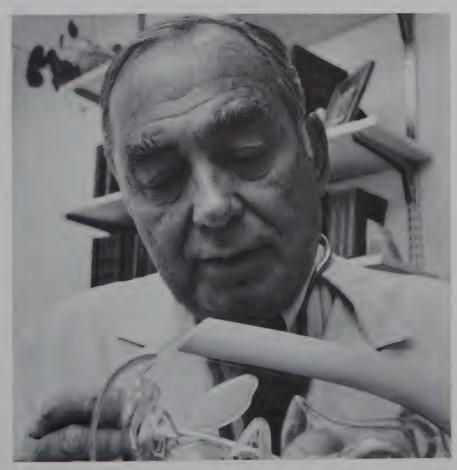
Inquiries concerning the program should be directed to the chairman.

## Department of Obstetrics and Gynecology

George D. Wilbanks, M.D.,
The John M. Simpson
Professor of Obstetrics and
Gynecology and Chairman
Donna S. Kirz, M.D., Director,
Rush-Christ OB-GYN, Integrated
Residency Program
Edward H. Axelrod, M.D.,
Chairman, Christ Hospital
and Medical Center
Barry Wolk, M.D., Director,
Residency Program, Christ
Hospital and Medical Center

The Department of Obstetrics and Gynecology offers a four-year post-medical school training program approved by the American Board of Obstetrics and Gynecology. The residency emphasizes comprehensive experience in all phases of obstetrics and gynecology, as well as experience in internal medicine,

neonatology, anesthesiology, intensive care, and obstetric and gynecologic pathology. The physician is prepared for the practice of general obstetrics and gynecology, for further sub-specialty training, or for a career in academic obstetrics and gynecology. This is an integrated residency program that combines the departments of obstetrics and gynecology of both Presbyterian-St. Luke's and Christ hospitals to provide a total, well-balanced experience. Elective time may be spent in clinical rotations or basic research programs in the Department of Obstetrics and Gynecology or in related specialties depending on the interest of the individual resident. There are seven positions at each level of a four-year program for a total of 28 residents. Fellowships are available in maternal/fetal



medicine, reproductive endocrinology and infertility and urogynecology.

All members of the attending staff are certified by the American Board of Obstetrics and Gynecology. They are actively engaged in teaching programs for house staff and medical students. Residents at all levels are involved in student teaching at

Rush Medical College.

During the first year, the resident spends eight months in obstetrics and gynecology, learning basic patient management skills and simple operative techniques. There is additional off-service rotation through general medicine, surgical intensive care and neonatal intensive care. In the second year, the resident assumes more responsibility in each rotation, as well as in the sub-specialty divisions of gyneoncology and endocrine infertility. In the third year, the resident begins to manage patients having more complicated problems, both in regard to preoperative work-up and obstetrical problems, and assumes more operative responsibility. There is a formal rotation in high-risk obstetrics as well as gyne-oncology, ultrasound, pathology and elective time. During the fourth year, the resident serves as the chief of the respective services in obstetrics and gynecology, both at Rush and at Christ Hospital and Medical Center. In addition, the senior resident staffs the adolescent family center clinic, and spends time in urogynecology genetics, colposcopy, as well as adolescent gynecology.

Each resident is required to complete at least one research project of his/her choice with a faculty advisor during the four years, for presentation at the Resident Seminar each spring. Many projects result in published papers and presentations at required national and international meetings.

All services are available for teaching and clinical experience. which encompasses a broad scope of problems including all subspecialties as listed. Active teaching clinics are conducted in the outpatient offices located in the Professional Building, and at Christ Hospital and Medical Center. The services have a total of 7,500 deliveries and 5,000 operative procedures annually, with emphasis on tertiary care problems in high-risk obstetrics, oncology, endocrinology, and complicated gynecologic operative procedures.

The department has staff representation in the major obstetric and gynecologic subspecialties: perinatal biology, endocrinology and infertility (including in vitro fertilization), oncology, community obstetrics, family planning, obstetric anesthesia, sexual dysfunction, and psychosomatic obstetrics and gynecology. Each subspecialty involves interdisciplinary associations to broaden patient care, teaching and research objectives, and there is maximum interdepartmental exchange and cooperation. Faculty with these diverse backgrounds, yet with a common interest in clinical obstetrics and gynecology, offer the resident depth in basic training and opportunity for specialized consultation and learning.

Applications for this residency program should be made to: Donna Kirz, M.D., Director of the Integrated Residency Program.

#### Section of

#### General Gynecology

Denes Orban, M.D., Director Dee E. Fenner, M.D., Associate Director

This section stresses the need for theoretical and practical instruction in the surgical aspects of gynecology, both abdominal and vaginal. Following the influence of Drs. Heney, Allen and Boysen, this section has strong emphasis on

vaginal surgery. Concommitantly, members of the section have an interest in urological problems associated with pelvic relaxation and a strong interest in infections in obstetrics and gynecology, where clinical research programs are ongoing.

Residents rotate through the general gynecology services each year. a program providing increasing responsibility for preoperative evaluation through surgery and postoperative care. In all surgical procedures the residents actively participate. The senior residents. who have adjunct attending privileges, have a major role in all surgical procedures in which they participate. The gynecologic attending staff has overall responsibility for all procedures performed by residents. Residents are also involved in urogynecology/uro-dynamic laboratorv.

Formal teaching activities of this section include grand rounds, patient bedside rounds, and a daily patient management conference. Each spring, a visiting professor is invited to participate in the annual seminar on "Aspects of Gynecologic Surgery."

#### Section of

## **Gynecologic Oncology**

## Edgardo L. Yordan, M.D., Director

The Gynecologic Oncology Section consists of four staff gynecologic oncologists and four nurse oncologists. The section provides a focus for multidisciplinary long-term care of women with gynecologic malignancies. Activities of the section include the prevention, diagnosis, management and follow-up care for these patients and integrates, in a multidisciplinary manner, the efforts of the sections of Gynecologic

Oncology, Radiation Oncology, Medical Oncology, Gynecologic Pathology, Nursing Oncology, Clinical Psychology, Clinical Nutrition, Social Services and Pastoral Care.

Residents are offered supervised graduated experience in the diagnosis and management of gynecologic cancer, including gynecologic surgery, gynecologic endoscopy, chemotherapy, and radiation therapy. Approximately 200 patients are seen each year. Residents rotate at second, third, and fourth year levels while at Rush-Presbyterian-St. Luke's Medical Center: they rotate at third and fourth year levels while at Christ Hospital and Medical Center. The Grant Hospital resident participates in all cases conducted at that institution. Residents participate in all surgeries and attend all outpatient sessions, including colposcopy. Didactic activities include daily teaching rounds, the weekly multidisciplinary clinic teaching conference, the formal gynecologic tumor board, a monthly oncology journal club, a monthly oncology research conference and periodic participation at general grand rounds.

Several clinical research projects are in progress within the division and in cooperation with the nation-wide Gynecologic Oncology Group. All residents are involved in basic cancer patient care and may elect to pursue a clinical or basic project during their training period.

#### Section of

#### Maternal/Fetal Medicine

## Howard T. Strassner, M.D., Director

Donna Kirz, M.D., Associate Director

The focus in the Section of Maternal/Fetal Medicine is care of the high-risk mother and fetus, both at Rush-Presbyterian-St. Luke's Medi-

cal Center and within the Rush perinatal network. Education of physicians in training and in practice is a vital portion of this responsibility.

The section is charged with providing obstetric education to the students, residents and fellows at Rush. We offer residents and fellows supervised experience with both inpatients and outpatients. Nearly 40 per cent of our deliveries are high-risk, totaling over 1,000 high-risk patients per year, in addition to antepartum admissions to the high-risk obstetrics service for medical, surgical and obstetric complications of pregnancy.

The Rush perinatal center is the tertiary referral center for the 12-hospital Rush perinatal network. Nearly 18,000 deliveries per year occur in the network, increasing our patient and research base.

Seven of the 28 residents in the OB/GYN department are assigned to various levels of responsibility on the maternal/fetal/obstetric service at Rush. The maternal fetal medicine program is approved by the American Board of Obstetrics and Gynecology for fellowship training in maternal fetal medicine. The residents are responsible with the fellow in maternal/fetal medicine for high-risk patients seen and admitted to Rush-Presbyterian-St. Luke's Medical Center. Rotations are also available in other departments and at network hospitals. Teaching consists of formal rounds. patient conferences, lectures and seminars. Involvement in the basic and clinical research of the section is encouraged. As prerequisites to acceptance, applicants for fellowship must be eligible for certification by the American Board of Obstet-



rics and Gynecology and licensed in the state of Illinois. Please direct inquiries to Howard T. Strassner, M.D., Director, Section of Maternal/Fetal Medicine.

#### Section of

## Obstetrics and Gynecology Research

## Lourens J.D. Zaneveld, D.V.M., Ph.D., The Harry Boysen, M.D. Professor of Obstetrics and Gynecology and Director

The Section of Obstetrics and Gynecology Research aims at amalgamating and coordinating all the research going on in the department and encouraging new research by the faculty, residents and students. The residents' research program is organized through this section. The Reproduction Research Laboratory, consisting of ten Ph.D.s or M.D.s, five graduate students, two technicians and one administrative coordinator, is part of this section. The laboratory performs research in the areas of fertility/infertility, reproductive toxicology and contraceptive development.

#### Section of

## Psychosomatic Obstetrics and Gynecology

#### Stephanie Cavanaugh, M.D., Director

Recognizing that the obstetriciangynecologist is often the primary provider of health care to his/her patients, the Section of Psychosomatic Obstetrics and Gynecology is organized to stimulate and encourage expertise in this area. A productive liaison exists with the Department of Psychiatry. Combined appointments have produced an interdisciplinary team of clinicians and a research group. Consultation concerning patients with psychosomatic problems and/or unusual emotional difficulties is available to the staff at all times.

Residents have the opportunity to acquaint themselves with the effect of the emotions on reproductive and gynecologic physiology, as well as the importance of social and economic factors in physical and mental health.

The case method is used as a tool in teaching. The department is devoted to the principle of good patient care and to developing new systems for delivering this care to the community. Faculty of this section attempt to stimulate trainees to develop their own special interests by providing opportunities for enhancing their understanding of and expertise in the field.

#### Section of

## Reproductive Endocrinology and Infertility

## Ewa Radwanska, M.D., Ph.D., Director

The Section of Reproductive Endocrinology and Infertility in the Department of Obstetrics and Gynecology concentrates on:

- Providing an up-to-date, comprehensive and scientific approach to the diagnostic evaluation and treatment of infertile couples, including assisted reproductive procedures: in vitro fertilization (IVF), embryo transfer (ET), gamete intrafallopian transfer (GIFT) and zygote intrafallopian transfer (ZIFT).
- Comprehensive and scientific management of endocrine disorders in women.
- Teaching of reproductive endocrinology and infertility at all levels of medical education —

medical students, residents and subspecialty fellows.

4. Conducting clinical and basic reproductive research.

The clinical activities of the section utilize the resources of the private practices of its members, (Infertility/Endocrinology Center) and are backed by a sperm bank, the Endocrine Laboratory, In Vitro Fertilization Laboratory, Microsurgery Laboratory and surgical facilities of the Medical Center.

Teaching activities of the section consist of regularly scheduled lectures, conferences, seminars, case presentations, journal club meetings and other didactic sessions as well as "bedside" teaching in the Medical Center.

One resident, at the second-year level, is assigned to the section for a seven-week rotation. The resident participates in all clinical, surgical and didactic activities of the section and is encouraged to take part in one of the ongoing research projects. The results of such a project may be chosen for a poster display on Rush University Day. During the rotation, he/she is expected to develop a basic knowledge of reproductive disorders, surgical skills in laparoscopy and hysteroscopy and to become familiar with microsurgical techniques.

The educational program of the section is approved by the American Board of Obstetrics and Gynecology for a two-year fellowship in reproductive endocrinology and infertility. Two fellows at each year level participate in all clinical, didactic and research activities of the section. In addition, the fellows pursue their own research projects as a part of their advanced training in reproductive endocrinology. Current research interests and activities of the section include studies of endometriosis, myomata, adenomyosis and cornual lesions and the effects of various treatment regimens particularly with gonadotropin releasing hormone (GnRH agnoists) on these diseases.

Identification of an optimal method of long-term estrogen replacement, management of dysfunctional uterine bleeding, sperm separation for intrauterine insemination, studies of ovulatory dysfunction, induction of ovulation, hyperandrogenism and hyperprolactinemia are some of the examples of ongoing clinical research. Other projects include effects of tubal surgery on ovarian function, evaluation of microsurgical techniques of tubal reconstruction, hormonal, dynamic and enzyme studies of male infertility, computer-assisted semen analysis. development of improved methodology for the cryopreservation of gametes, zygotes and pre-embryos and a study of factors determining success of assisted reproductive procedures.

#### Section of

#### Ambulatory Reproductive Health Care

#### Dee E. Fenner, M.D., Director

The Section of Ambulatory Reproductive Health Care offers a wide range of experience in the ambulatory care of the obstetrical and/or gynecological patient. These experiences include routine health maintenance, prenatal care, cancer detection, venereal disease detection and treatment, family planning, and detection and treatment of gynecologic disease.

In the ambulatory setting, the resident has the opportunity to follow the obstetrical patient both prenatally and during the postpartum period. For those gynecological patients requiring surgery, the resident follows the patient both preoperatively and postoperatively at the Adolescent Family Center, the private offices of Women's Health Consultants and the new

ambulatory unit of Christ Hospital and Medical Center. Recently, the department has added experience in a free-standing surgicenter to the surgical rotations, since this form of care is becoming more common and important.

Emphasis is placed on preventive medicine and patient education. A resident may elect, with consent of the director, to engage in programs to develop particular skills in areas such as colposcopy or urodynamics.

#### Section of

## Urogynecology

## Peter K. Sand, M.D., Director

The Section of Urogynecology is actively involved in the care of women with lower urinary tract and complex gynecologic disorders. Research interests within the section involve the investigation of various forms of nonsurgical therapy for urinary incontinence as well as comparative surgical trials. The section

is also active in research of irritative voiding symptoms from such disorders as interstitial cystitis, the urethral syndrome and recurrent urinary tract infections. Investigations of lower urinary tract dysfunction interface with problems involving genital prolapse and dysfunction. The section acts as a tertiary referral source for patients with complicated urogynecologic problems throughout the Midwest.

A fellowship is offered within the Section of Urogynecology, which is one of only nine such positions available throughout the country. The section is actively involved in the activities of the American Urogynecological Society and International Urogynecologic Association.

Members of the section are currently involved in numerous clinical projects including experimental trials with pelvic floor stimulation for urinary incontinence, calcium channel blockers for the treatment of detrusor instability, comparative trials looking at cystometric methodology, suprapubic bladder drainage, and anti-incontinence surgical techniques. Residents are encouraged to participate in these projects.



## Department of Ophthalmology

## William E. Deutsch, M.D., Chairman

Thomas A. Deutsch, M.D., Program Director

Residency training in ophthalmology is a four-year program accredited by the Accreditation Council for Graduate Medical Education. Two residents are appointed each year and begin their ophthalmological training following a pre-ophthalmology year administered in cooperation with the Department of General Surgery at Rush-Presbyterian-St. Luke's Medical Center. In this R-1 year the rotations include internal medicine, infectious diseases, neurology, neurosurgery, plastic surgery, ENT surgery, general surgery and ophthalmology. Positions are filled through the Ophthalmology Matching Program sponsored by the Association of University Professors of Ophthalmology.

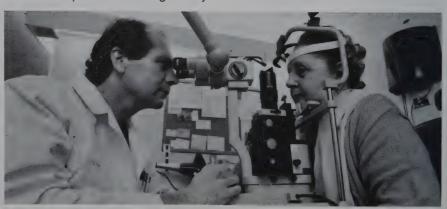
The primary purpose of the ophthalmology program is to train residents in the excellent clinical care of patients with all types of eye diseases. Opportunities exist for clinical and basic science research throughout the three ophthalmology years; this is not, however, a prerequisite for completion of the program.

The training program emphasizes continuity of care, with patients followed continuously from the beginning of training. Attending physicians are present during every

clinic and are readily available for teaching on every case. The rate of development of surgical technique is limited only by the resident's personal competence. Extraocular procedures are performed immediately after beginning the ophthalmology service. Intraocular procedures may be performed beginning in the latter half of the first year. The American Academy of Ophthalmology Basic and Clinical Science Course, a 12-volume set of manuals, is provided for each resident. The Chicago Curriculum in Ophthalmology, a citywide basic and clinical science course, is mandatory for all eye residents. Clinical lectures by faculty, as well as conferences, are given on a regularly scheduled basis. Grand rounds in other departments are available if the subjects are of ophthalmic interest. First-year ophthalmology residents spend one-half day each week learning ophthalmic pathology and preparing presentations for pathological conferences.

Most outpatient clinical activities occur in the Joseph and Helen Regenstein Eye Center of Rush-Presbyterian-St. Luke's Medical Center. This is a modern clinical complex with full facilities including Argon, Krypton and YAG laser, complete ultrasonography, electroretinography, fluorescein angiography, and other ophthalmic photography including video recording.

Inquiries should be addressed to the chairman.



## Department of Orthopedic Surgery

Jorge O. Galante, M.D., The William A. Hark, M.D.— Susanne G. Swift Professor of Orthopedic Surgery and Chairman

Ken N. Kuo, M.D., Director, Orthopedic Residency Program

The Department of Orthopedic Surgery offers a five-year residency accredited by the American Board of Orthopedic Surgery. Four positions are available each year at Postgraduate Level 1. For those who have completed a residency in orthopedic surgery and are seeking specialized training, additional one-year postgraduate fellowships are available in joint replacement surgery, spinal surgery, surgery of the hand, sports medicine and orthopedic research.

The prime focus of the residency is to prepare clinicians who are well trained in all facets of orthopedic surgery. In addition to ample exposure in general orthopedics, the residents participate in the care of patients with complex problems in joint replacement, spinal deformities, pediatric orthopedics, orthopedic oncology, hand surgery, adult spine surgery, foot surgery and sports injuries. All residents are expected to participate in clinical research during their training. For those who have academic interests, there is an opportunity for a six-month rotation in laboratory research.

The residency is organized on the principle of increasing resident responsibility under the supervision of the attending staff. The first postgraduate year is a rotating surgical internship with exposure to general surgery, neurosurgery, cardiovascular surgery, plastic surgery, and surgical intensive care. During the second and third postgraduate years, the resident serves as a junior house officer on the orthopedic services at Rush-Presbyterian-St. Luke's Medical Center and Christ Hospital and Medical

Center. The elective rotation in orthopedic research is available during the third postgraduate year for those who have acquired a good clinical background. During the fourth year, the resident spends six to nine months in pediatric orthopedic rotation at Shriner's Hospital for Crippled Children, Chicago Unit. with the remaining time serving as a senior resident at Rush-Presbyterian-St. Luke's Medical Center. The fifth postgraduate year is a chief resident position with advanced surgical and patient care opportunities at both Rush and Christ Hospital and Medical Center.

All patients at Rush and the affiliated hospitals are available for the teaching experience. Clinical exposure encompasses a broad scope of musculosketal problems including joint replacement, spine surgery, pediatric orthopedics, orthopedic oncology, trauma, sports injuries, hand surgery, foot surgery and surgery for arthritis. Outpatient exposure is provided in the private offices of the attending staff which are located in the adjacent Professional Building and River City Complex. Supervised resident clinics are held weekly encompassing patients with fractures, pediatric orthopedic problems and general orthopedics. Pediatric orthopedic rotation at Shriner's Hospital and Denver Children's Hospital provides additional experiences in management of clinic outpatient. The attending staff at Rush consists of 12 full-time board certified orthopedic surgeons. All areas of orthopedic subspecialty are represented.

In addition to clinical teaching, daily didactic conferences are held at the Medical Center. These conferences cover topics including surgical indications, pediatric orthopedics, surgical anatomy, sports medicine, basic sciences, and histopathology of musculoskeletal disorders. Weekly grand rounds are held on Saturday morning and in-

teresting cases are presented by the residents and are discussed by the attending staff, with participation of orthopedic surgeons from the community. Distinguished visiting professors are invited several times a year with their emphasis centering on lectures and discussions with the resident staff. Workshops on technical skills in orthopedic surgery are held during the year to give the residents additional "hands-on" exposure in specialized surgical skills.

The department maintains a dedicated emphasis on both basic and clinical research. A full-time staff of over 30 professionals, including three with Ph.D. degrees, is employed in orthopedic research. The biomechanics laboratory contains a sophisticated opto-electronic gait analysis laboratory which is utilized in projects evaluating total joint arthroplasty, cerebral palsy, osteotomy and knee ligament injuries. Other areas of ongoing investigation include stress analysis of total hip and total knee prostheses, bone remodeling biomechanics, materials analysis of orthopedic implants, development of new prosthetic devices, new applications of bioelectricity in orthopedics, and cartilage biochemistry. The Department of Orthopedic Surgery has pioneered the use of porous materials to attach prosthetic implants to the skeleton. Research from the department has won numerous national and international awards.

#### Section of

## **Spinal Surgery**

### Ronald L. DeWald, M.D., Director

The Section of Spinal Surgery is dedicated to patient care, resident education and clinical research. Diagnosis and treatment are rendered to a wide variety of spinal afflictions including deformity, tumors, infections, fractures, and degenerative and metabolic diseases. Approximately 700 new



spinal patients are evaluated each year, providing a broad base for resident education. Four to six spinal surgeries are performed each week employing the latest techniques and instrumentation.

The Section of Spinal Surgery emphasizes the team approach to patient care. The Section is comprised of four orthopedic spine surgeons and three clinical nurse specialists. The Section also offers three fellowship positions for board eligible orthopedic surgeons. The resident is part of the team, and expected to be an active participant in patient care. Resident participation includes diagnostic evaluation in the office, pre- and post-operative care in the hospital and surgical responsibility in the operating room. Residents assume an increasing role in patient care commensurate with their ability and interest.

Daily rounds are conducted by the attending staff providing residents with exposure to bedside diagnostic skills and teaching. The Section of Spinal Surgery is an integral part of the Department of Orthopedic Surgery. The residents continue to attend grand rounds, teaching conferences and training programs.

#### Section of

### **Orthopedic Oncology**

#### Steven Gitelis, M.D., Director

The Section of Orthopedic Oncology is responsible for the diagnosis and treatment of musculoskeletal neoplasms. This includes soft tissue tumors primarily of the extremities and also primary bone tumors. The section sees approximately 100 new tumor patients per year.

The management of primary bone and soft tissue tumors emphasizes the concept of limb salvage. This amounts to removal of the neoplasm with reconstruction to provide for a functional return. Limb salvage requires extensive knowledge and experience in the area of bone transplantation, prosthetic replacement, and tumor biology. In addition to the clinical care of patients with musculoskeletal tumors, the section has developed a broad-based research program. Clinical research is being performed in tumor biology and diagnosis. Basic science research is being done in the area of tumor biology, utilizina tissue culture methodology and also animal models. In addition. bone transplantation research is primarily looking at the influence of electrical stimulation on the healing of allografts.

The Section of Orthopedic Oncoloay is comprised of one full-time orthopedic surgery attending and an orthopedic oncology nurse clinician. Residents and medical students rotate on the service on a regular basis. Elective clerkships in orthopedic oncology can be arranged for senior medical students. Finally, the Section of Orthopedic Oncology has at present a postdoctoral fellow working both in the clinical care of oncology patients and in the research laboratory. A weekly pathology conference is held on Friday in the Pathology Department. A biweekly Sarcoma Management Conference is also held.

#### Section of

#### Orthopedic Research

Thomas P. Andriacchi, Ph.D.,
The Claude N. Lambert, M.D.—
Helen S. Thomson Professor of
Orthopedic Surgery and
Director

The research program in the Department of Orthopedics is divided into three basic science categories: biomechanics, biomaterials and biochemistry. The common goal

that links these diverse scientific disciplines is their association with the prevention, treatment and understanding of mus- culoskeletal diseases. Each of these basic science areas interacts with the clinician to address both basic and clinically relevant research problems. The educational aspects of the program include pre- and postdoctoral training, and the basic sciences for orthopedic residents and clinical fellows. More than 30 technical and professional staff are involved in the orthopedic research. Seminars and projects are carried out in close collaboration with the departments of biochemistry, rheumatology and pathology, as well as several universities and the National Institutes of Health.

Following is a description of the basic research program:

 Biomechanics Program— Thomas P. Andriacchi, Ph.D. Director

The biomechanics activities apply basic principles from mechanics to the study of the human musculoskeletal system. Current research activi-

ties include the functional analysis of patients treated with various types of total joint replacement. Studiés are continuing on sports-related injuries and the use of biomechanical functional evaluation to analyze and evaluate various injuries and treatment modalities. The laboratory also utilizes analytical techniques to mathematically model the musculoskeletal system.

 Biomaterials Program— Jorge O. Galante, M.D., Director

The use of titanium materials attached by a bone ingrowth to replace defects in the skeletal system has been a noteworthy development from our laboratories. Factors which control bone ingrowth and remodeling are under investigation. A new program is beginning in the department to quantitate specific mechanical parameters and their relationship to a biological response in bone. There is also an ongoing study of the metal ion released from



various implant materials to calculate potential toxic or carcinogenic effects of the metals in the body.

3. Biochemistry Program— Tibor Glant, M.D., Ph.D., Director

The primary emphasis has been on the biosynthesis of proteoglycans factors influencing cartilage. It is believed that understanding the molecular mechanisms for this process will lead to improved treatment for degenerative diseases of this tissue such as osteoarthritis.

Low molecular weight proteins extracted from cartilage are also being studied. Research on the molecular organization of the extracellular cartilage matrix is carried out, including changes that occur

during the differentiation of epiphyseal cartilage, calcification and replacement by bone and during osteoarthritic lesions. Current studies concentrate on the separation and characterization of the anti-invasion factor(s), its mechanism of action and the biochemistry of the specific growth inhibitory factors(s).

Current research programs also include molecular biology and molecular immunology of cartilage matrix components, isolation and characterization of proteoglycan-specific T-cell clones and monoclonal antibodies with arthritogenic potential, cartilage transplantation and the study of bone resorption following joint replacement.

Inquiries regarding the program should be directed to the chairman.

## Department of Otolaryngology and Bronchoesophagology

## David D. Caldarelli, M.D., The Stanton A. Friedberg, M.D., Professor and Chairman

The Department of Otolaryngology and Bronchoesophagology offers a five-year residency fully accredited by the American Board of Otolaryngology. The training program consists of one resident per year with the first year of training in general surgery and the remaining four years in otolaryngology. Under the direct supervision of the full-time and part-time attending staff, the residents assume full responsibility for preoperative, operative and postoperative patient care.

At network and area hospitals separate clinical and surgical rotations in facial plastics and neuro-otologic surgery and pediatric otolaryngology provide supplemental training.

Hospital admissions are approximately 1,000 patients annually with an average daily census of 20. The outpatient otolaryngology clinic held four days per week averages approximately 4,500 outpatient

visits per year. In addition, there is a weekly multidisciplinary tumor clinic staffed in conjunction with therapeutic radiology and medical oncology. Clinical instruction is supervised by the part- and full-time attending staff. Annually, 1,500 surgical procedures provide experience in microscopic otology, head

and neck oncology, craniofacial anomaly, maxillofacial traumas, head and neck reconstructive surgery, facial plastic surgery and bronchoesophagology. Extensive head and neck laser and cryosurgery experience is also available.

Resident exposure to basic laboratory or clinical research is provided and currently involves assessment of chronic middle ear disease, airway problems in association with craniofacial anomalies, the cytologic aspects of head and neck tumors, and pathophysiology of sleep apnea syndrome. In conjunction with the Department of Pathology, several biologic markers including cytokeratin K19 and

nucleolar organizing regions are being investigated and correlated with flow cytometry as predictors in head and neck cancers. In conjunction with the Department of Therapeutic Radiology and the Section of Medical Oncology, the efficacy of adjunctive chemotherapy in head and neck cancer is being studied. In conjunction with the Section of Communicative Disorders, head and neck cancer patients continue to be studied as they receive comprehensive rehabilitation services. The establishment of the Speech Physiology Laboratory, in the Section of Communicative Disorders. provides the opportunity for residents to learn first hand concepts underlying air pressure and airflow measurement procedures. Clinically, the use of this laboratory will allow objective measurement of airway function and create treatment options which are currently not available.

The residents are expected to pursue a clinical or basic laboratory research project during their training. In addition, residents are expected to present research papers at local and national specialty society meetings. Each resident is afforded the opportunity to attend a national specialty meeting or postgraduate medical education course in each year of training.

Inquiries concerning the program should be directed to the department chairman.

Meryl H. Haber, M.D.,

Department of Pathology

Acting Chairman and Director, Clinical Pathology Training John R. Dainauskas, M.D., Senior Associate Chairman Melvin M. Schwartz, M.D., Associate Chairman Alexander Templeton, M.D., Associate Chairman

#### Section of

#### Communicative Disorders

## Dianne H. Meyer, Ph.D., Director

The Section of Communicative Disorders is an integral part of the Department of Otolaryngology and Bronchoesophagology. Over 5,000 patients (neonate through geriatric) are seen annually for audiologic assessment, vestibular assessment, speech/language evaluation/ therapy, and voice evaluation/ therapy. Rotations through the section can be arranged to include case observation and tutorial sessions. The second year otolaryngology resident spends one full month in the section during that year. In addition, formal lectures, case studies and in-services are provided to the otolaryngology residents throughout the academic vear. Lecture and discussion topics include auditory/vestibular, anatomy and physiology, hearing science, principles and interpretation of audio vestibular testing, impedance audiometry, central auditory function and evoked potentials. Other topics include swallowing, videofluoroscopy, videostroboscopy. electroneuronography, speech physiology and neurogenic aspects of speech.

The Department of Pathology offers a five-year residency in anatomic and clinical pathology, fully accredited by the American Medical Association. Optional one-to-two-year fellowships are offered for additional training in surgical pathology subspecialties, clinical pathology or in research training. On completion of training, all residents are qualified for examinations by the American Board of Pathology.

The objective of the program is to provide residents with in-depth training in all facets of modern diagnostic pathology and laboratory management. The program is intellectually intensive. Residents are expected to master both theoretical and practical material. A goal of the program is to train pathologists who will be competitive for outstanding positions in either academic or community medical centers and who have the requisite training to assume a leadership role in their profession.

The training involves a three year "core" experience with an additional two years of in-depth experience in selected specialty areas. The core experience provides the resident with an introduction to all facets of anatomic and clinical pathology and exposure to a broad range of case material. In addition to rotations in surgical pathology, cytopathology and autopsy pathology, the resident rotates through all of the major clinical pathology laboratories. Although the strength of the Rush program has traditionally been disproportionately in anatomic pathology, this has changed in recent years with the appointment of Dr. Meryl Haber as medical director of the clinical laboratories. Clinical pathology at Rush has emerged as a strong discipline under Dr. Haber's direction. The program is structured so that there are anatomic and clinical pathology rotations in each of the first three years. In addition, there is time allocated for electives so that the resident can begin to explore areas in which special competency training may be acquired in the

fourth and fifth years of training.

All rotations include participation in numerous clinical and teaching conferences. The Department of Pathology at Rush plays a central role in the educational programs of many other clinical departments. This affords the pathology resident abundant opportunities to gain skills as a clinical consultant.

Residents electing to pursue anatomic pathology or clinical pathology exclusively select a research topic and begin investigative work under the supervision of senior investigators. Excellent research opportunities are offered within the Department of Pathology in electron microscopy, cytopathology, cancer biology and medical informatics. Research-oriented residents are encouraged to attend basic science seminars and lectures, to take relevant course work for purposes of enrichment and to attend national meetings. Because the research laboratories are in close proximity to the service laboratories and the library of Rush University, it is feasible to monitor the activities of the laboratory services while engaged in active research programs. This permits residents to study the material from a large number of interesting and unique cases throughout their training. In addition to the broad-based training offered at Rush-Presbyterian-St. Luke's Medical Center, electives can be arranged at other Chicago institutions in forensic pathology and pediatric pathology.

Inquiries concerning the program should be directed to the chairman.

## Department of Plastic and Reconstructive Surgery

## Randall E. McNally, M.D., Acting Chairman

A two-year graded training program in general plastic and reconstructive surgery is fully accredited by the Tripartite Conference Committee on Graduate Training sponsored by the American Medical Association. The American College of Surgeons, and the American Board of Plastic Surgery. To be considered for appointment, applicants must have completed a minimum of five years of acceptable training in general surgery to comply with the requirements of this service. Each vear, one resident is selected to start training.

At present, an average of more than 3,000 plastic surgery patients are operated on annually at the Medical Center. Plastic surgery patients embrace a wide variety of ages and types. Bed privileges and

special operative times are offered to residents, but all of the patients in the hospital are available for teaching purposes.

Residents will be trained in overall preoperative surgical diagnosis and care, surgical treatment, and postoperative care of patients amenable to treatment by plastic surgery. Residents will gain more than adequate experience in the various methods of excisional and reparative surgery of the scalp. face, orbits, nose, oral cavity, neck, trunk and extremities, as well as experience in management of neoplasms of the head and neck, cosmetic surgery, facial trauma, surgery of the hand, burns, and congenital abnormalities of the extremities and genitalia.

Cooperation with other disciplines (orthopedics, general surgery, genitourinary, gynecology, bronchoesophagology, neurosur-



gery) allows exceptional experience in reconstruction of the esophagus, larynx, trachea, vagina and abdomen, and the repair of extensive encephalocele, myelomeningocele, and severe craniofacial deformities.

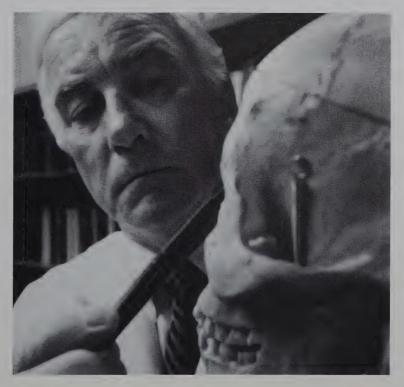
Residents are given ample opportunity to perform major procedures under the supervision of the attending staff. Increasing ability brings increased responsibility. To help the resident acquire skill and judgment in all phases of work, emphasis is being placed on personal instruction at the bedside, in the clinic, in the operating room, and in the pathology and anatomy laboratories. Active participation in research is mandatory. The program stresses participation in weekly grand rounds, tumor conferences, surgical research projects, hand seminars and journal reviews. The resident also spends time each week in private offices of the attending staff.

There is a separate hand clinic where acute and extensive reconstructive hand surgery cases are

seen and operated upon (see hand surgery section). A large caseload of cleft lip, cleft palate and severe craniofacial anomalies are operated upon by the plastic surgical staff and residents at Presbyterian-St. Luke's Hospital. There is a close relationship with the Center for Craniofacial Anomalies at the University of Illinois Abraham Lincoln School of Medicine, where more than 1,800 cases are seen each year.

Increased emphasis within the department is being given to microvascular surgery, both in the operating room and in the research laboratory. Both junior and senior residents are afforded the opportunity to attend major surgical meetings during the year. They are encouraged to present papers on their own or in conjunction with the attending staff. A resident will be given an appointment as instructor in the department for the entire training program.

Inquiries concerning the program should be directed to the chairman.



#### Section of

#### **Hand Surgery**

#### Robert R. Schenck, M.D., Director

The Section of Hand Surgery encompasses all facets of the care of the hand, including traumatic, reconstructive, congenital, rheumatoid and especially microsurgical applications needed in the more sophisticated aspects of hand reconstruction.

Dr. Schenck is assisted by hand surgery fellows who spend a year under his direction, and an orthopedic resident who does a threemonth rotation. Their duties are not only clinical, in that they participate in the preoperative selection, operative treatment, and postoperative management in the office, but also education- and research-oriented as well. They participate in the monthly hand surgery conferences and monthly hand problem cases in orthopedic grand rounds.

A strong component of the Section of Hand Surgery involves the learning and refining of microsurgical techniques in the laboratory and application to research projects relating to improved methods of microvascular surgery. The laboratory is fully equipped with two operating microscopes and staffed by a full-time technician.

Please direct inquiries to the director.

Department of Diagnostic Radiology and Nuclear Medicine

## Jerry P. Petasnick, M.D., Chairman

Ernest W. Fordham, M.D., Associate Chairman

Robert A. Kubicka, M.D., Associate Chairman

Claire Smith, M.D., Director,
Postgraduate Residency
Training Program and Medical
Student Elective Clerkship

The Department of Diagnostic Radiology and Nuclear Medicine provides consultation for over 200,000 patient examinations each year. The department encompasses a space of 45,000 square feet. All the routine radiographic work is displayed daily within each subspecialty section for interpretation, consultation, and teaching. Special display areas are also located in other areas of the Medical Center. Outpatients of private physicians are examined in private radiologic offices in the Professional Building located across from the hospital. Radiology residents receive their training at Rush-PresbyterianSt. Luke's Medical Center and at Affiliated Radiologists, S.C., in the Professional Building on the Rush campus.

State-of-the-art equipment is provided for all standard radiographic, fluoroscopic and special procedures. The special procedures suite of three rooms contains single and biplane filming with digital subtraction capabilities for performing neurologic, peripheral and interventional angiographic procedures.

The computed tomography suite houses two state-of-the-art multipurpose scanners with multidimensional reconstruction capabilities available for imaging of the brain, spine, and body.

The Section of Ultrasound contains five state-of-the-art scanners. Three have Doppler capabilities, one has color Doppler. A dedicated transrectal machine is available for the evaluation of the prostate and distal large bowel. A portable machine with a specialized high frequency "T" shape transducer is

routinely used in the operating room.

The magnetic resonance imaging center currently houses two super conductive magnets (0.5 and 1.5 Tesla) for clinical care and research. The center contains its own display center, conference room and research space.

In the second quarter of 1990, a radiology information system will be installed and integrated into the hospital-wide information system to further enhance clinical services and care. A computer laboratory located within the Department of Radiology is available for further research and clinical support.

There are daily conferences within each section. Each week radiology grand rounds and a chairman's conference are held. The department also provides radiologic consultation at various hospital-wide conferences, medical grand rounds, pediatric grand rounds, clinical pathological conference, tumor board and semiweekly autopsy conferences.

Each section maintains its own collection of teaching material. The Fay H. Squire Memorial Radiological Library is located within the department. The American College of Radiology teaching file is kept

locked and available to residents only in the on-site departmental conference room.

All diagnostic radiologists and residents are urged to attend the scientific meetings of the Chicago Radiological Society, held six times a year. Time is made available for all residents to attend refresher courses at the annual convention of the Radiological Society of North America when it is held in Chicago.

The Department of Diagnostic Radiology and Nuclear Medicine offers four positions annually in a four-year residency program in diagnostic radiology which is accredited by the American Medical Association. Applicants for the four-year program are accepted after a clinical year through the Radiology Residency Training Program. Inquiries regarding the program should be directed to Claire Smith, M.D., Director, Postgraduate Radiology Residency Training Program.

Post-residency fellowships are available in neuroradiology, combined computed tomography/ultrasound/magnetic resonance imaging (MRI), nuclear medicine and interventional radiology. Inquiries for fellowships should be directed as follows: Neuroradiology - Michael S. Huckman, M.D.; Body Imaging -



David Turner, M.D.; Interventional -T.A.S. Matalon, M.D.; and Nuclear Medicine - E. Fordham, M.D.

Beginning with the first year of training, the resident is responsible for the interpretation of all radiography and the performance of every special procedure in the department. Every film interpretation, however, is individually checked by an attending staff member of the appropriate section, and every special procedure is supervised throughout its duration by a specialty radiologist. Various degrees of responsibility are delegated during the training program. Residents play an active role teaching medical students who rotate through the various clerkship rotations provided by the department. These include: Diagnostic Radiology (Rad 601), Interventional Radiology (Rad 611), Correlative Imaging (Rad 612) and Pediatric Radiology (Ped 631).

There is a full-time staff of 25 radiologists. For administrative and teaching purposes, the department is divided into 14 sections. Each section has a full-time director, and each member of the staff is assigned to one of the sections, which are:

#### Section of

#### **Breast Imaging**

#### Peter Jokich, M.D., Director

The Section of Breast Imaging is responsible for the technical performance and interpretation of all breast imaging examinations and procedures. Although mammography is the primary focus of the section, breast ultrasound, ductography, pneumocystography, and pre-operative needle localization of breast lesions are also performed when necessary. The section is also involved in educational endeavors and research activities related to breast imaging and breast cancer diagnosis.

#### Section of

## Gastrointestinal Radiology

#### Claire Smith, M.D., Director

Plain and contrast-enhanced radiographic and fluoroscopic studies of the abdomen and gastrointestinal tract, the gallbladder and biliary system, and the pancreas are performed in this section. Methods include routine bi-phasic examination of the upper alimentary tract and double contrast examinations of the colon whenever possible. Enterolysis studies of the small bowel are selectively performed. Special dynamic radiology studies of the distal rectum and anus during defecation are major areas of interest. Educational and research studies are underway in cooperation with the clinical disciplines of gastroenterology, general surgery, neurology, and speech pathology.

#### Section of

#### **Medical Informatics**

## Laurens V. Ackerman, M.D., Ph.D., Director

This section provides direction in the evolution of our radiology information system (RIS) and our picture archive and communication system (PACS) plus management of the aforementioned. Along with the design and management of the multiple computer networks in the department, it also is concerned with their connection to each other and to areas outside the department. It provides programming support to clinical and administrative areas in the department and conducts research into image analysis. artificial intelligence, PACS, RIS, networks and computer systems.

#### Section of

#### Interventional Radiology

#### Terence A.S. Matalon, M.D., Director

The Section of Interventional Radiology is responsible for diagnostic and therapeutic intervention both in non-vascular and vascular settings. Examinations are usually performed by a resident and fellow with the supervision and assistance of an attending radiologist. In contrast to other areas in radiology, interventional radiology comprises a primary care discipline. The interventional radiology section is responsible for the preprocedural evaluation performance and postprocedural follow-up with respect to specific clinical problems.

#### Section of

#### Musculoskeletal Radiology

#### John R. Charters, M.D., Director

This section supervises the performance and interpretation of many of the radiologic studies involving the bones, joints, and soft tissues of the body (examinations using radioactive material and magnetic resonance fall under the supervision of other sections). Plain film examination, conventional tomography, computed tomography, and arthrography come under this section. All examinations are initially undertaken and reviewed by one of the residents-in-training but final interpretation is directed by an attending radiologist.

#### Section of

## Neuroradiology

#### Michael S. Huckman, M.D., Director

This section is responsible for the following examinations: plain skull radiography, myelography, all head and neck arteriography and venography, and cranial and spinal CT and magnetic resonance imaging. There is also a significant volume of endovascular therapeutic procedures performed.

#### Section of

#### **Pediatric Radiology**

#### B. Kim Han, M.D., Director

This section is responsible for imaging children under 16 years of age using multimodality techniques. This section performs plain radiographs, fluoroscopy examinations (including upper GI, small bowel series, barium enema, excretory urography and voiding cystourethrogram), ultrasound, CT and MRI. Also performed are portable fluoroscopic examinations children with sleep apnea. Portable routine head ultrasounds are performed regularly in the neonatal intensive care unit. The portable ultrasound examination is also used in the operating room, assisting neurosurgeons and pediatric surgeons during the operation.

#### Section of

#### **Thoracic Radiology**

### Robert A. Kubicka, M.D., Director

This section is responsible for the interpretation of all standard ex-

aminations of the chest, including portable films and chest fluoroscopy, as well as supervision and interpretation of computed tomographic sections of the chest. also is responsible for work-up of renal transplant patients and performs angioplasty of renal arteries, dilation of ureteral and urethral strictures.

#### Section of

#### Ultrasound

#### Bruce Silver, M.D., Director

The Section of Ultrasound uses high frequency sound waves to create images. Lack of ionizing radiation makes ultrasound the examination of choice in obstetrics. However, the scope of diagnostic ultrasound encompasses every organ system of the body. The addition of Doppler Ultrasound has significantly changed evaluation of vascular structures both arterial and venous. Recent development of color Doppler has further expanded ultrasound's role. New endoluminal probes allow for evaluation of the prostate and ovaries. Newer applications include evaluation of the gastrointestinal tract. Guided biopsies are now routinely performed under ultrasonic guidance. New small transducers combined with portability of the equipment have made possible intraoperative uses.

#### Section of

## **Urologic Radiology**

#### Suresh K. Patel, M.D., Director

The Section of Urologic Radiology is responsible for performance and interpretation of excretory urography, voiding cystourethrography, hysterosalpingography, vaginography, pull-out pyleography, percutaneous nephrostomy, renal angiography, adrenal arteriography and venous sampling. The section

#### Section of

#### **Nuclear Medicine**

#### Ernest W. Fordham, M.D., Director

The Section of Nuclear Medicine offers a two-year residency in nuclear medicine. Applicants must have completed two years of previous training in internal medicine, radiology, pathology or a combination of these. The residency program is accredited by the American Medical Association. Upon completion of the program, trainees are qualified to take the nuclear medicine board examination.

During the two-year program, trainees rotate through endocrinology, immunology and special hematology for experience in invitro studies. Special emphasis is placed on the correlation of imaging studies. Trainees are offered optional rotations in CT and ultrasonography.

The section also offers a oneyear fellowship in nuclear medicine to applicants who have completed a diagnostic radiology residency. This program qualifies trainees for the special radiology board recognizing exceptional competence in nuclear medicine.

The major educational activity of the Section of Nuclear Medicine is the daily informal case reporting conference in which trainees actively participate in the wide ranging discussions which lead to generation of the final formal report. The formal didactic clinical lecture series includes speakers from other institutions. The lecture series covering radiopharmaceuticals and pertinent physical sciences is taught by a radiochemist and physicists.

Approximately 12,000 imaging procedures are performed annually on a wide range of modern imaging equipment including tomographic scanners (adapted for positron imaging), scintillation cameras up to 21 inches in diameter, and portable cameras with computer capability for dynamic cardiac studies.

Major interests of the section include (a) the graphic demonstration of the whole body distribution of radionuclides including those primarily used for specific organ imaging, (b) continued evaluation of the application of the computerassisted, dynamic cardiac studies (including phase analysis) and their effectiveness, and (c) collaboration

with Argonne and Brookhaven National Laboratories in the evaluation of cyclotron-produced radionuclides, particularly Fe<sup>52</sup> for hemopoietic marrow imaging. The section has also been very active in the clinical evaluation of commercial prototype equipment.

Trainees are actively encouraged to undertake primary responsibility for their own research projects and/or participate in ongoing departmental projects. Trainees usually attend one out-of-town meeting at departmental expense.

Inquiries concerning these programs should be directed to the section director.

## Department of Therapeutic Radiology

### Frank R. Hendrickson, M.D., Chairman

The department offers a four-year program leading to qualification for the American Board of Radiology examination in therapeutic radiology, starting at the internship level. The program is accredited by the American Medical Association and the American Board of Radiology. The board eligibility requirements are four years of training after medical school, (of which three years are to be in therapeutic radiology) and successful passing of the written examination and an oral exam taken one year later.

The Department of Therapeutic Radiology is housed in the Woman's Board Cancer Treatment Center and contains the sections of clinical radiation oncology, medical physics and radiation biology. The 25,000 square feet of the Woman's Board Cancer Treatment Center contains three major treatment machines with electron capabilities: a hyperthermia unit, a treatment simulator, and a superficial contact therapy unit with intraluminal capabilities.

The department also has special

procedure rooms for minor surgical procedures, basic research laboratories, offices and examining rooms. The radium laboratory contains 750 mg of radium isotopic equivalent for clinical use. An electronics shop provides maintenance, design and production of special equipment.

#### Section of

## **Radiation Oncology**

## Anantha K. Murthy, M.D., Director

The section registers 1,200 new cancer patients per year. There are more than 15,000 treatment visits and 3,000 follow-up visits per year. These patients are seen by 11 attending staff and six house staff. All patients are seen initially by the radiation therapy house staff for preliminary evaluation and treatment planning before finalization of the treatment program with the attending staff.

The progress of the patients on treatment is frequently evaluated and monitored by both the house staff and the attending staff. Plans for all new patients are reviewed with the department's attending and resident staffs. Patients are admitted directly to radiation therapy services and priority operating room privileges are assigned for radiotherapeutic operative procedures.

The department has an integrated residency program with Christ Hospital and Medical Center. A three-month rotation through the radiation therapy department at Christ is mandatory. Rotation through pediatric radiation oncology either in the Chicago area or at other institutions in the United States is available.

The didactic teaching of the residents by the attending staff is carried out through three intradepartmental clinical conferences and one physics conference, as well as numerous interdepartmental conferences such as the lymphoma, head and neck, urology, sarcoma, gynecology and medical oncology for multidisciplinary discussions. Topic reviews and journal club conferences are done on assignment by rotation among the residents. Two to three visiting professors per year and metropolitan area radiation therapy conferences provide other opportunities for learning.

New modalities such as intraoperative radiation therapy, hyperthermia, radiation therapy along with sensitizing chemotherapy, whole body electrons for lymphomas of the skin, whole body radiation for bone marrow transplants, endobronchial implants and interstitial radiation for brain tumors are performed under institutional as well as nationwide protocols. Opportunities for independent investigations are available.

Medical students from Rush and other schools who rotate through the department offer stimulus as well as teaching challenge. In addition, first year residents from surgery have an elective onemonth rotation through therapeutic radiology.

Inquiries concerning the program should be addressed to the chairman.

#### Section of

### **Medical Physics**

#### Arlene Lennox, Ph.D., Director

The Section of Medical Physics provides service and instruction to the entire Medical Center. Its general objectives are to improve methods of disease detection, to plan and measure radiation dosage, to design new apparatus and to protect the patient, the worker, and the public by assessing the radiation levels of the environment. These objectives are achieved through the application of physical science and engineering.

The faculty of the Section of Medical Physics of the Department of Therapeutic Radiology, together with the faculty of the Department of Medical Physics of the College of Health Sciences, are responsible for teaching radiologic physics to residents and medical students in the Departments of Diagnostic Radiology, Nuclear Medicine, and Therapeutic Radiology. The faculty has established a series of credit courses which permit physicians to obtain the necessary training for licensure by the Nuclear Regulatory Commission. The courses cover: radiation physics and instrumentation, radiation protection, mathematics pertaining to the use and measurement of radioactivity, radiation biology and radiopharmaceutical chemistry.

In addition to the residency program described above, Rush University offers a program leading to a master of science degree in radiological sciences. The goal of the program is to train well-motivated physicians and dentists in radio-

logical research as it applies to various branches of radiation medicine (i.e., therapeutic radiology, diagnostic radiology and nuclear medicine) and radiation protection. The program offers optional areas of inquiry.

Graduates of the program, having demonstrated an ability to carry out research by completing the requirements for the master of science degree, will have an enhanced opportunity to enter a career in academic medicine. Furthermore, having participated in research, they will be more proficient in evaluating the significance of research reported in the medical literature.

#### Section of

#### **Radiation Biology**

#### David B. Rubin, M.D., Director

The research section of therapeutic radiology is involved in several projects designed to investigate the mechanisms of the alteration of radiation injury. The major focus of investigations in the science of radiation biology has been the radiation response of the vascular endothelial cell (EC). The vascular EC is the lining cell of all blood vessels and is an important regulator of blood flow and interaction between blood and surrounding tissue. EC are critical targets of radiation injury and other types of free-radical oxidant stress. For radiation oncologists, a better understanding of the destruction, survival and function of injured EC could lead to the development of stratagems that would protect normal tissues against radiation while enhancing the treatment of tumors. However, the understanding of the EC response to free radical/oxidant stress also is applicable to acute and chronic diseases that concern all aspects of medicine.

EC cultured from bovine vessels have been irradiated in order to study 1) the role of antioxidant defenses in cell survival, 2) cell cycle events related to survival, 3) the role of eicosanoids as markers and moderators of damage. The mechanisms of changes in cellular and tissue radiosensitivity may be useful in altering the therapeutic ratio and increasing the effectiveness of radiation as a treatment of cancer. A formal course in radiobiology is offered each year in the Spring term designed to acquaint students with the fundamentals of the interaction if ionizing radiation with living organisms. The staff of the section also provides lectures on radiation effects to the graduate nursing oncology program each year. Residents in therapeutic radiology have a three-month rotation through the laboratory to become familiar with laboratory procedures involved in the research program. The combination of course work and the active participation in ongoing research activities provides the residents with both established concepts and current views in the field of radiobiology as applied to radiation therapy.



## Department of Urology

## Charles F. McKiel, Jr., M.D., Chairman

The Department of Urology offers a five-year residency program. The department has a full-time pediatric urologist, who is head of the Section of Pediatric Urology. This educational experience is approved for certification by the American Board of Urology. The residency program is fully accredited by the Residency Review Committee in Urology and the Accreditation Council on Graduate Medical Education.

The first two years of residency training are devoted to nephrology, oncology, radiology, infectious diseases, 12 months general surgery, renal transplantation or other specially requested programs approved by the chairman. This plan allows the resident to have a firm foundation when urological training is begun in the third year of residency. The resident will have at least 12 months of general surgery during the pre-urologic years.

The third year of residency is the first year in urology and emphasis is on endoscopy and the various special diagnostic techniques that are the backbone of the specialty. The

resident gains wide experience in urologic surgery, usually as first or second assistant.

The third-year resident has wide and primary responsibilities in patient care, but is encouraged to conduct some research in association with a member of the staff in the urology research laboratory. Such research may be continued in future years.

The fourth-year resident assumes increasing responsibility for the inpatient service at Presbyterian-St. Luke's Hospital. During the fourth year, the resident performs major urologic surgery under close supervision and begins his/her transurethral experience.

During the fourth year, the resident is assigned to Pediatric Urology for a six-month period. He scrubs on all pediatric cases and sees pediatric patients in the office with the pediatric urologist.

In the fifth year, the senior resident is also in charge of all conferences and delegates responsibility for education, patient care and research as seen fit. Although attending urologists are always available for counsel and assistance, the senior resident is en-

couraged to pursue a vigorous and self-reliant course of patient care and teaching.

All patients admitted to the service are available for teaching, and clinical experience encompasses a broad scope of problems including infertility, tumor surgery, stone disease with percutaneous ureteroscopy and extracorporeal shock wave lithotripsy experience, obstructive diseases of the urinary tract, microsurgery and prosthesis (urinary and penile).

Active teaching clinics are conducted in private outpatient offices located in the Professional Building. The department sees approximately 3,883 patients per year, 92 percent of whom are adults and eight percent children. Currently there is an average of 4,800 surgical procedures including transurethral resections.

All residents are required to attend weekly teaching conferences held at Rush Medical College. The resident is required to participate in and attend those conferences on the service through which he/she is rotating during the first and second years. The Journal Club meets twice a month. Chairman's rounds are held weekly. Morbidity and mortality conferences are held monthly.

All residents are required to participate in the Chicago Urological Society meetings. The society meets regularly during the winter months. Out-of-town speakers are regularly invited to give special rounds. These may deal with new research, new surgical or diagnostic techniques or new concepts in treatment.

All residency inquiries should be directed to the chairman.

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#### Accreditations

Joint Commission on Accreditation of Healthcare Organizations Accrediation Council on Graduate Medical Education Liaison Committee on Medical Education National League for Nursing Council on Accreditation of **Education Programs for Nurse** Anesthetists American Medical Association's Committee on Allied Health Education and Accreditation (medical technology, occupational therapy) Accrediting Commission of Education for Health Services Administration Association for Clinical Pastoral Education

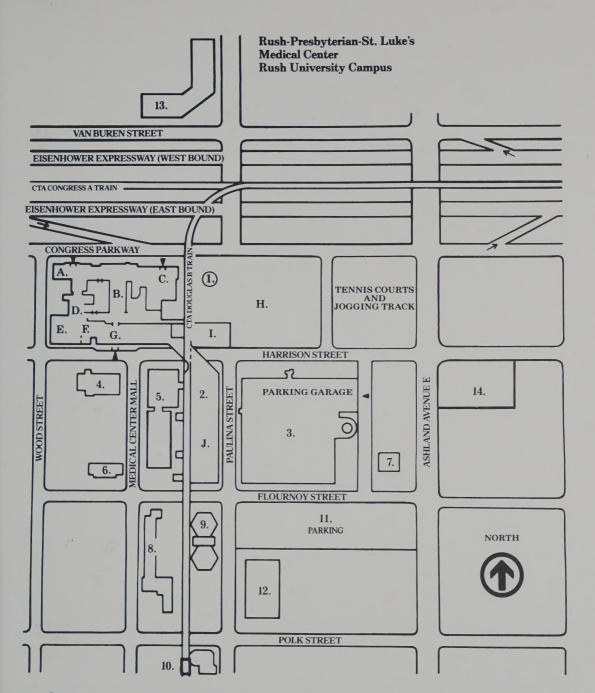
#### Licenses

Department of Public Health, State of Illinois Cook County Board of Health

#### Memberships

American Hospital Association Blue Cross/Blue Shield Health Care Service Corporation Illinois Hospital Association Chicago Hospital Council Association of American Medical Colleges American Association of Colleges of Nursing

## NOTES



- 1) Presbyterian-St. Luke's Hospital
  - A. Jones
  - B. Pavilion
  - C. Kellogg Pavilion
  - D. Murdock
  - E. Rawson
  - F. Senn
  - G. Jelke SouthCenter
  - H. Atrium Building
  - I. Woman's Board Cancer Treatment Center
- 2. Academic Facility
  - J. Employee and Student Cafeteria
- 3. Parking Garage
- 4. Schweppe-Sprague Hall

- 5. Professional Building
- 6. Kidston Apartments
- 7. Laurance Armour Day School
- 8. Marshall Field IV Mental Health Center
- 9. Johnston R. Bowman Health Center for the Elderly
- 10. Polk Street Station, CTA
- 11. Parking
- 12. Human Resources Center for Employee Development 13. 1700 W. Van Buren
- Office Building
- 14. The Inn at University Village

